LABORATORY DATA DVD
(Prepared in Response to DTSC's May 9, 2007 Comment on RFI Vol 1)

CONTENTS

The CD contains the documents related to these areas. The relevant samples results reports are bookmarked with links to the indicated groups.

1. SMWU 5 (Sludge Drying Beds)
File name: Ph1and2CloserCertRpt_June1990.pdf

Group 1: Pages 191-196
Group 2: Pages 233-248

2. SMWU 6 (Chromate Reduction Tank)
File name: Ph1and2CloserCertRpt_June1990.pdf

Group 1: Pages 284-285
Group 2: Pages 296-297
Group 3: Page 299
Group 4: Pages 302-307
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SMWU 7 (Precipitation Tank)
File name: Ph1and2CloserCertRpt_June1990.pdf

Group 1: Pages 170-177
Group 2: Pages 180-181
Group 3: Pages 209-212
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SWMU 8 (Process Pump Tank)
File name: Ph1and2CloserCertRpt_June1990.pdf

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SMWU 9 (Transfer Sump)
File name: Ph1and2CloserCertRpt_June1990.pdf

Group 1: Pages 300-301
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SMWU 10 ([Unit 4.11] – Old Evaporation Ponds)
File name: Trident_1993.pdf
File name: Brown and Caldwell_1985a.pdf
File name: Brown and Caldwell_1986.pdf

File name: AnalyticalDataReport_Ph3EvapPonds_Rev1_Nov1992.pdf

Group 1: Pages 1-98
Group 2: Pages 127-130
Group 3: Pages 198-221
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File name: EcologyandEnviron_2003.pdf

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AOC 18 (2-Step WWTS Piping)
File name: Ph1and2CloserCertRpt_June1990.pdf

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Oil Water Separator System

File name: ClosureActivityRpt_OilWaterSepartor_July1990.pdf

Group 1: Pages 1-12

Non-conventional data files

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WaterAnalysis_12-28-1951.pdf
WaterAnalysis_6-24-1964.pdf

m. Helhauser
19909

PHASES 1 AND 2
CLOSURE CERTIFICATION REPORT
HAZARDOUS WASTE MANAGEMENT FACILITIES

TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Prepared for:

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

Prepared by:

MITTELHAUSER CORPORATION
LAGUNA HILLS, CALIFORNIA

JUNE 1990

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SECTION 1.0

EXECUTIVE SUMMARY

1.0 EXECUTIVE SUMMARY

The Pacific Gas and Electric Company (PG&E) has completed Phases 1 and 2 of the closure of Hazardous Waste Management Facilities (HWMF) at its Topock Compressor Station. The closure activities are described in Sections 4 through 12 of this report. Except as noted in subsections titled "Deviations from the Closure Plan", the closure was conducted in accordance with the Closure Plan, as approved by the California Department of Health Services (DHS) and the Environmental Protection Agency (EPA) in their letter of July 10, 1987.

Only the Phases 1 and 2 closure activities are described in this report. Phases 1 and 2 include all hazardous waste management facilities within the compressor station area itself: Drying Beds, Chromate Reduction Tank, Precipitation Tank, Process Pump Tank, Transfer Sump, Piping and miscellaneous items, such as pumps and small collection sumps. Phase 3 will be closure of the Evaporation Ponds. Phase 3 closure will be described in a separate report to be submitted at a later time.

PG&E completed the following tasks during Phases 1 and 2 of closure of the Hazardous Waste Management Facilities:

1. All hazardous waste management facilities in the compressor station area have been "clean" closed. This includes the Sludge Drying Beds, Chromate Reduction Tank, Precipitation Tank, Process Pump Tank, Transfer Sump, Piping and associated small sumps, pumps and valves.

2. Hazardous sludge and contaminated tanks, pipes, soil and miscellaneous debris were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

3. Nonhazardous concrete from the Sludge Drying Beds and Transfer Sump and the foundations of the Chromate Reduction Tank, Precipitation Tank and the Process Pump Tank was disposed of at the San Bernardino County Class III Landfill at Barstow and was used as fill material on site at the Topock Compressor Station.

4. Except for the vitrified clay sludge pipeline and one other short section, all inactive pipelines that conveyed hazardous waste have been pressure tested. With one exception, all pipeline sections passed the pressure test, indicating that they did not leak. The section that leaked and most of the other pipeline sections were removed and disposed of as hazardous waste.

5. The final confirmation soil samples from beneath all hazardous waste management facilities, including pipeline sections, indicate that hazardous constituent concentrations are less than or only de minimis greater than the site-specific background standards.

In summary, confirmation sampling shows that all significant contamination has been removed. The original intent of this closure has been accomplished: no hazardous waste has been left on site and all contaminated waste residues, tanks, sumps, pumps, concrete liners and foundations, pipelines and soils have been removed. For these reasons, the closure meets the intent of federal and state regulations regarding closure. The closure should be considered a "clean" closure with no post-closure, groundwater monitoring or other requirements.

SECTION 2.0

CLOSURE CERTIFICATION

2.0 CLOSURE CERTIFICATION

This report presents the Phase 1 and 2 closure activities for the Hazardous Waste Management Facilities at Pacific Gas and Electric Company's Topock Compressor Station, near Needles, California. Closure of the Evaporation Ponds, which is Phase 3 of the closure, is not included in this report. The closure activities were performed in substantial compliance with the specifications in the approved Closure Plan, dated October 28, 1985, and revised in August 1986, except as identified as deviations from the Closure Plan in this report. The statements, conclusions and recommendations herein are based on my understanding of the site conditions and operations. A conscientious effort was made to evaluate all aspects of the site conditions; and the collected data is considered to be technically accurate and complete to the best of my knowledge.

June 20, 1990
Date

Project Manager (GE&C)
~~Manager, Topock Compressor Station~~
Pacific Gas and Electric Company

June 14, 1990
Date

Elyse D. Heilshorn
Registered Civil Engineer
State of California
Number 36567

REGISTERED PROFESSIONAL ENGINEER
ELYSE D. HEILSHORN
No. C036567
Exp. 06/30/92
CIVIL
STATE OF CALIFORNIA

SECTION 3.0

INTRODUCTION

3.0 INTRODUCTION

Pacific Gas and Electric Company (PG&E) has completed Phases 1 and 2 of the closure of hazardous waste management facilities at its Topock Compressor Station near Needles, California. Locations of the hazardous waste management facilities (HWMFs) are shown in Figure 3-1.

3.1 REPORT ORGANIZATION

The closure activities are summarized in the next five sections. Organization of these sections is based on the closure steps from the approved Closure Plan. The steps and the tasks that make up each step are listed in Section 3.2.

The following topics are described for each step, as appropriate: 1) field procedures, 2) sample locations and methodologies, 3) analytical data, 4) conclusions relative to that data, and 5) deviations from the Closure Plan. The analytical data for each step is presented in one table in that step's section. In each data table, the samples are arranged by sample media: sludge, water, concrete and soil. The samples are then arranged numerically by sample number.

One document which describes closure activities has been previously submitted to the regulatory agencies: "Background Soil Sampling and Analysis, Compressor Station Area, Closure of the Hazardous Waste Management Facilities, Topock Compressor Station, December 1988, and revised in April 1989." The background report is summarized in Section 4.0. The entire report is presented in Appendix A.

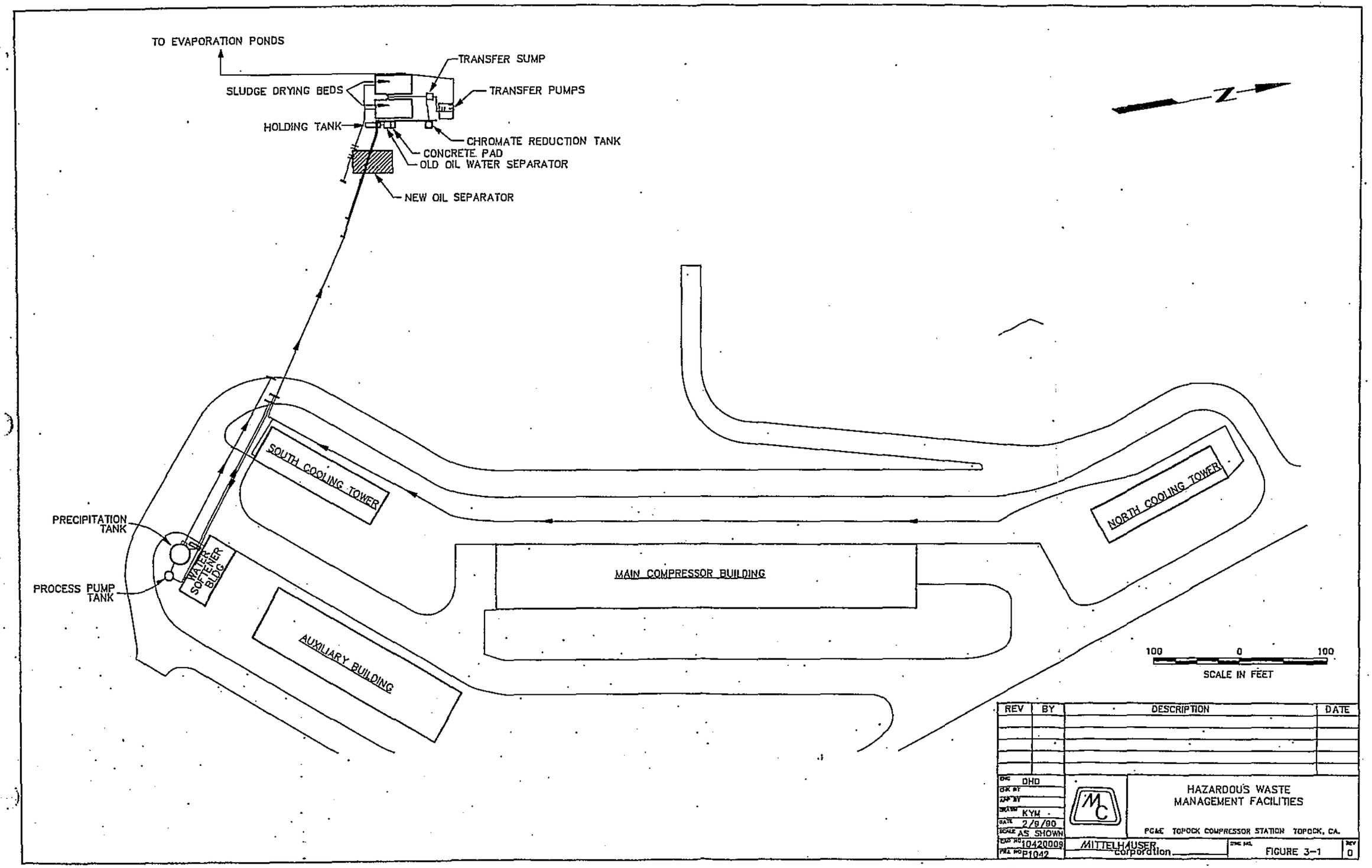
3.2 CLOSURE STEPS

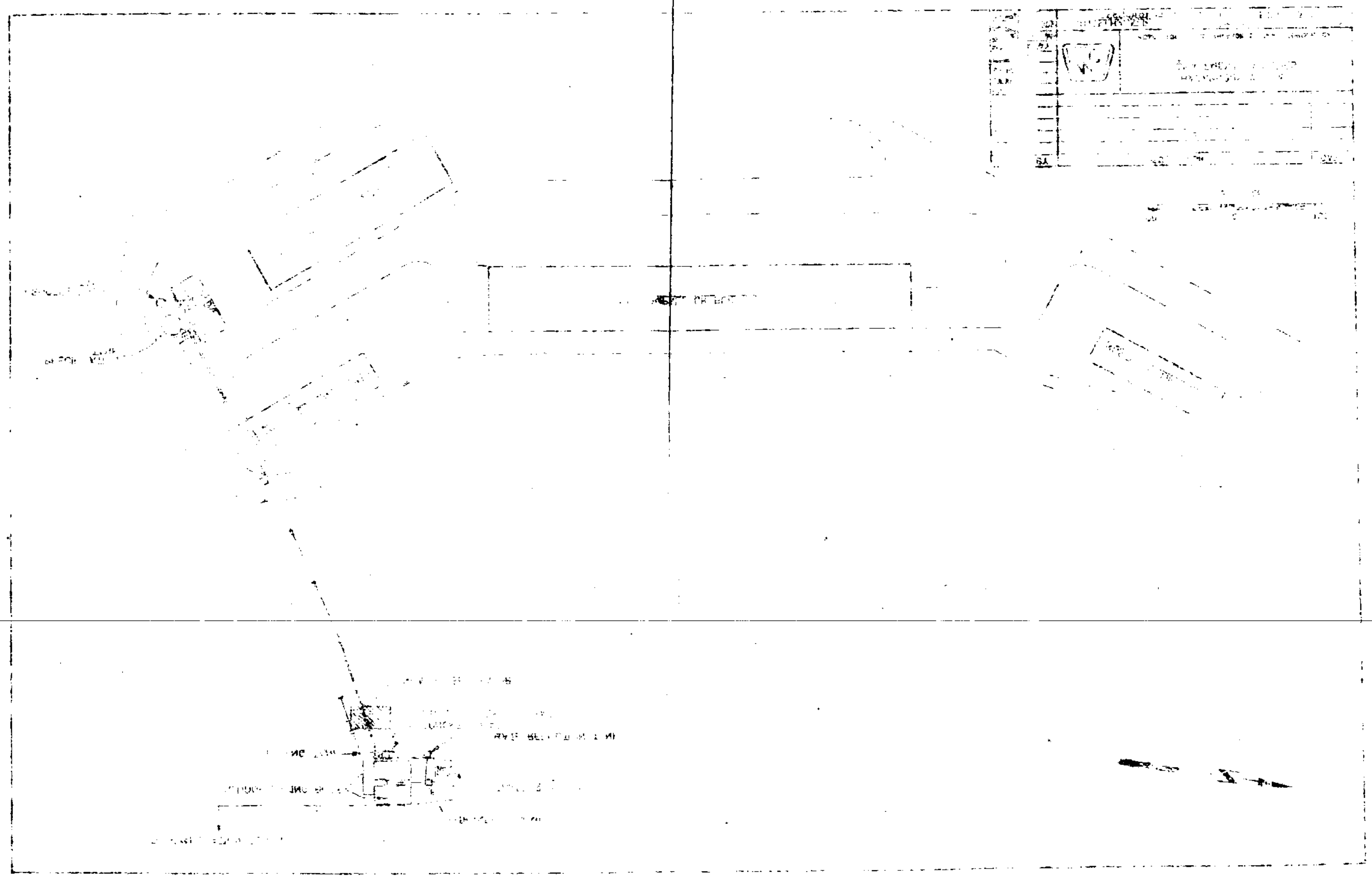
The closure steps and tasks from Section 11.0 of the approved Closure Plan are summarized below.

1. Notify EPA, DHS and RWQCB of Closure

2. Drying Beds

   2.1 Remove and dispose of liquid and sludge
   2.2 Sample and analyze, remove and dispose of the concrete bottom
   2.3 Sample and analyze subsoil. If concentrations exceed cleanup levels, propose appropriate procedures


TO EVAPORATION PONDS
TRANSFER SUMP
SLUDGE DRYING BEDS
TRANSFER PUMPS
HOLDING TANK
CHROMATE REDUCTION TANK
CONCRETE PAD
OLD OIL WATER SEPARATOR
NEW OIL SEPARATOR
N
SOUTH COOLING TOWER
NORTH COOLING TOWER
PRECIPITATION TANK
PROCESS PUMP TANK
WATER SOFTENER BLDG
MAIN COMPRESSOR BUILDING
AUXILIARY BUILDING
100 0 100
SCALE IN FEET
REV
BY
DESCRIPTION
DATE
DHD
KYM
2/9/90
AS SHOWN
10420009
P1042
HAZARDOUS WASTE
MANAGEMENT FACILITIES
PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.
MITTELHAUSER corporation
FIGURE 3-1
0



3. Chromate Reduction, Precipitation and Process Pump Tanks

   3.1 Remove and dispose of liquid and sludge
   3.2 Hydroblast, and sample and dispose of hydroblast wastes
   3.3 Dispose of or scrap the tanks
   3.4 Sample and analyze, remove and dispose of the concrete foundations
   3.5 Sample and analyze subsoil. If concentrations exceed cleanup levels, propose appropriate procedures

4. Transfer Sump

   4.1 Remove and dispose of liquid and sludge
   4.2 Hydroblast and dispose of hydroblast wastes as hazardous
   4.3 Inspect the sump for cracks or deterioration
   4.4 Sample and analyze the concrete sump
   4.5 Sample and analyze subsoil
   4.6 If concentrations exceed cleanup levels, propose appropriate procedures

5. Piping

   5.1 Sample wastewater and pressure test active pipelines. Expose and inspect pipelines and surrounding soil, sample subsoil.
   5.2 Pressure test inactive pipelines. Expose and inspect pipelines and surrounding soil, sample subsoil.

   Sample, analyze and dispose of the chromic hydroxide sludge pipeline as a hazardous waste.

6. Evaporation Ponds - Closure of the Evaporation Ponds will be covered in a separate, Phase 3 Closure Certification Report.

7. Certify Closure

8. Notify EPA, DHS and RWQCB of Completion of Closure

SECTION 4.0

BACKGROUND SOIL SAMPLING AND ANALYSIS

4.0 BACKGROUND SOIL SAMPLING AND ANALYSIS

This section summarizes background soil sampling for the compressor station area. This section is a summary of the report "Background Soil Sampling and Analysis, Compressor Station Area", which was revised in April 1989. The entire background report is presented in Appendix A.

The background soil samples were collected in general accordance with Attachment G of the approved Closure Plan, "Determination of Background". Deviations from the Closure Plan are explained in Section 4.4.

These background soil samples represent the compressor station itself, the area in which the Phase 1 and 2 closure activities have been conducted. Separate background soil samples for Phase 3 will be taken in the Evaporation Pond area which is located approximately 1,200 feet west of the compressor station.

4.1 SAMPLING PROCEDURES

The rationale for selecting background boring locations and the procedures for collecting the soil samples are summarized in the following sections.

4.1.1 Selection of Boring Locations

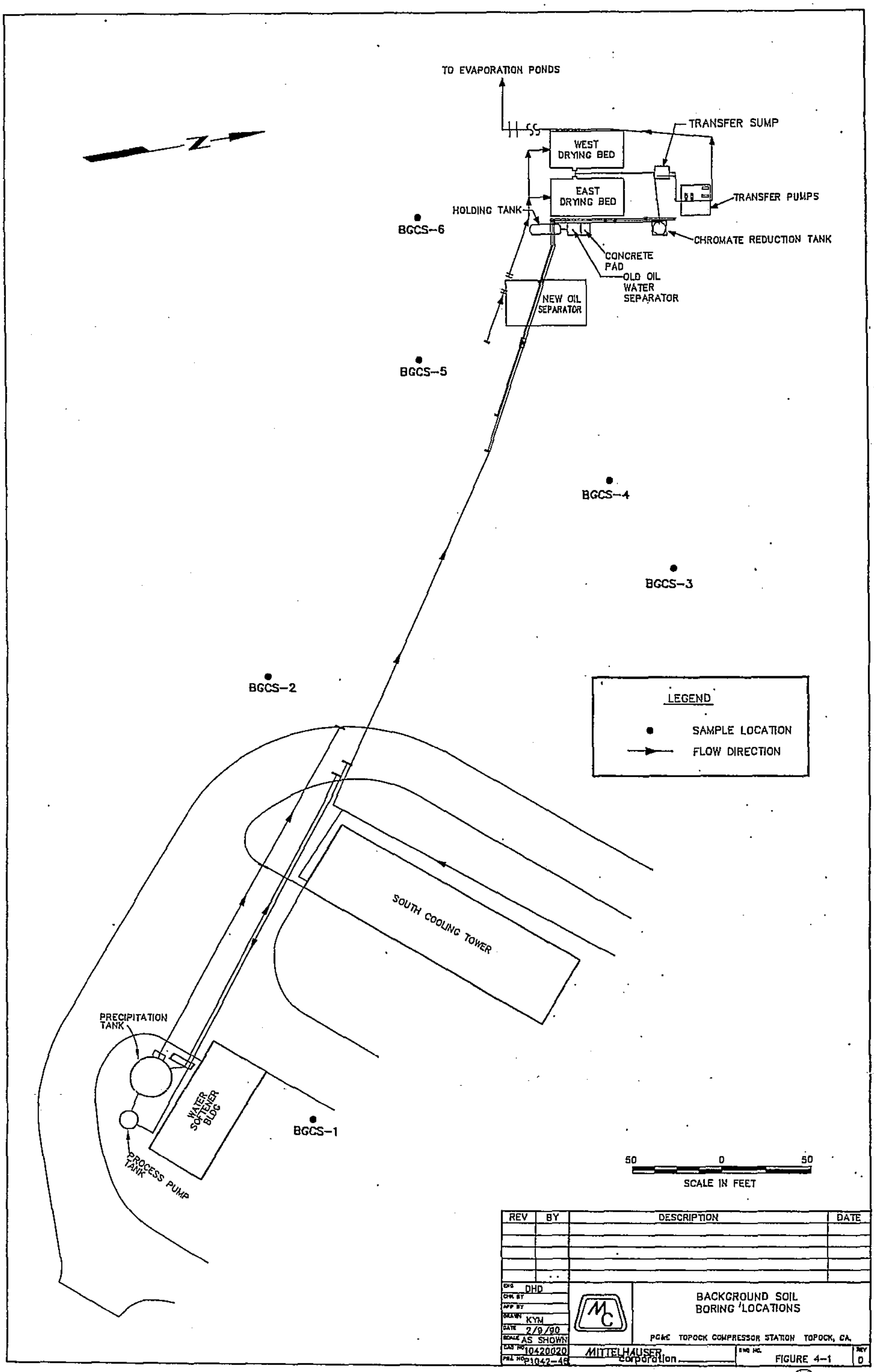
Background soil samples were obtained at the six locations shown in Figure 4-1. The sample locations are sufficiently close to the HWMFs to represent the same soil types as those underlying the HWMFs, yet far enough so that contamination by the HWMFs is unlikely. The sample locations were also chosen so that they would be away from structures, underground utilities and other obstructions.

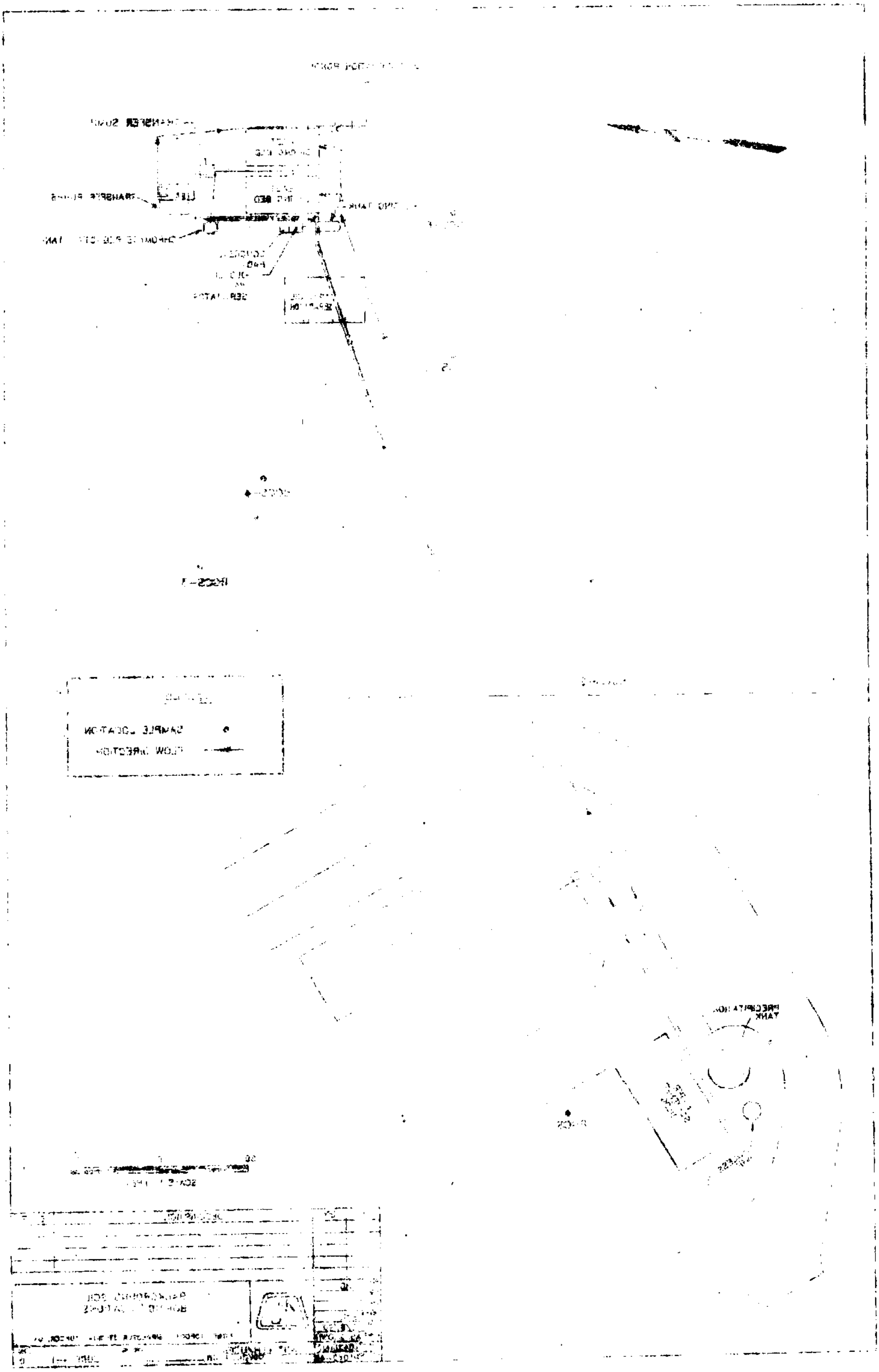
4.1.2 Sample Collection

The samples were collected from the walls of backhoe trenches at depths of 6, 12 and 18 inches. Replicate samples were collected at two of the locations for metals analysis by a secondary laboratory.

4.1.3 Sample Analysis

The samples were acid digested and analyzed for the metals listed in Table 4-1, Attachment 2, of the Closure Plan. The analytical parameters, methods and detection limits are listed in Table 1 of Appendix A.


TO EVAPORATION PONDS
TRANSFER SUMP
WEST DRYING BED
EAST DRYING BED
TRANSFER PUMPS
HOLDING TANK
CHROMATE REDUCTION TANK
CONCRETE PAD
OLD OIL WATER SEPARATOR
NEW OIL SEPARATOR
BGCS-6
BGCS-5
BGCS-4
BGCS-3
BGCS-2
BGCS-1
LEGEND
SAMPLE LOCATION
FLOW DIRECTION
SOUTH COOLING TOWER
PRECIPITATION TANK
WATER SOFTENER BLDG
PROCESS TANK
PUMP
50 0 50
SCALE IN FEET
REV
BY
DESCRIPTION
DATE
DHD
KYN
2/9/90
AS SHOWN
10420020
P1042-46
BACKGROUND SOIL BORING LOCATIONS
PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.
MITTELHAUSER corporation
FIGURE 4-1
0



The quality assurance/quality control (QA/QC) program consisted of analyses of sample replicates and spikes and of method blanks and spikes by the primary laboratory. Ten percent of the samples submitted to the primary laboratory were analyzed in this way. In accordance with the Closure Plan, approximately ten percent of the samples were also split in the field and submitted to the secondary laboratory for analysis.

4.2 BACKGROUND SOIL ANALYTICAL DATA

Analytical data and the laboratory reports for the background soil samples are presented in Appendix A. As described in Appendix A, the QA/QC program detected apparent outliers in the analytical data. To evaluate the validity of the outlier values, both the primary and secondary laboratories were asked to review their procedures, calculations and reports for numerical errors. If none could be found, the laboratories were asked to reanalyze selected samples.

Analytical data for all replicates of each sample are listed in Appendix A. The replicate data includes both primary and secondary laboratory duplicates and reanalyzed replicates of the same sample.

4.3 CALCULATED BACKGROUND STANDARDS

Attachment G of the Closure Plan specifies that the background standards will be equal to the arithmetic mean plus three standard deviations. Calculated background standards for the Compressor Station Area are presented in Table 4-1 (Column 1). If the reported concentration was less than the analytical detection limit, one-half the detection limit value was used in the statistical calculations. Data from both laboratories, including QA/QC duplicates and reanalysis samples, were included in the statistical calculations. A few outlying values that were much greater than other concentrations of that parameter and greater than typical concentrations in natural soils were excluded from the calculations.

Concentrations in natural soils are also presented in the table for comparison with the background standards. Many of the background standards are quite close to the average concentrations of trace metals in natural soils (Column 2). All the background standards are within the common ranges of concentrations in natural soil (Column 4). The natural soil data are from an EPA publication, "Hazardous Waste Land Treatment", SW-874, 1983.

The maximum concentrations in all the compressor station background samples (Column 3) can also be compared with the common ranges of concentration in natural soil (Column 4). Except for cadmium, the maximum background concentrations are less than the maxima of the common ranges in natural soil. For cadmium, the maximum concentration in the background samples (0.8 mg/kg) only slightly exceeded the upper end of the common range in natural soil (0.7 mg/kg).

4.4 DEVIATIONS FROM THE CLOSURE PLAN

Several parameters were analyzed in addition to those specified in Attachment G of the Closure Plan, "Determination of Background". Only six parameters are specified for analysis on page G-5: pH, Cr(III), Cr(VI), Ni, Zn and Cu. However, this list of parameters is inconsistent with Attachment B of the Closure Plan, the "Sampling and Analysis Plan". Attachment B specifies that potentially contaminated samples will be analyzed for fluoride plus all 18 metals listed in 22 California Code of Regulations 66699(b) (including both Cr(III) and Cr(VI)). All 19 parameters specified in Attachment B were analyzed in the background soil samples.

As explained in the Introduction, background samples for the compressor station area only are included in this section. Background standards calculated from these samples will apply to Phases 1 and 2, only. Separate background samples will be taken for Phase 3, closure of the evaporation ponds. As explained on Page G-2 of the Closure Plan, separate collection of the background samples was anticipated.

SECTION 5.0

STEP 2: DRYING BEDS

5.0 STEP 2: DRYING BEDS

This section summarizes procedures to close the sludge Drying Beds.

5.1 FIELD PROCEDURES

Most of the liquids and sludge had been removed and the Sludge Drying Beds were cleaned shortly after the conversion from chromate to phosphate cooling water treatment in October 1985. Except for a small volume of rainwater in the Drying Beds sumps, there was no liquid in the Sludge Drying Beds when closure began in November 1988. At that time there was a thin layer (0 to 5 mm) of dry solids in the Drying Beds. The solids appeared to be sand with some clay that had blown into the Drying Beds. The solids were removed by hand with shovels and brooms. The shovels and brooms were decontaminated with a water spray and the water was transferred to the Portable Tank. It was not necessary to decontaminate any other equipment since only the shovels and brooms came into contact with hazardous waste or high concentrations of hazardous waste constituents. The dry solids and sorbent that were used to remove water from the sumps were placed in a roll-off bin. The contents of the roll-off were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

After removal of these solids, light green deposits were visible on the concrete of the Drying Beds, especially the walls. Since the appearance was similar to the sludge in the Precipitation and Process Pump Tanks, the light green deposits were assumed to be chromium hydroxide sludge. The walls and floors of the drying beds were hydroblasted until visual inspection indicated that the green deposits were removed. The hydroblast water was pumped into a 10,000 gallon portable tank. Disposal of the contents of the portable tank is described in Section 5.2.

The concrete floors and most of the walls were then broken up with a 1,200 pound hydraulic breaker. Beneath the concrete the soil had no visible evidence of leaks, especially no green color. Some soil under the west drying bed had a rusty color where there was rebar on the bottom surface of the concrete.

In February 1989, after the analytical results for the concrete and underlying soil were received, the concrete was removed and transported to the San Bernardino County Class III Landfill near Barstow, California, for disposal. An estimated 125 cubic yards of concrete, including approximately 30 cubic

yards from the foundations of the Precipitation and Process Pump Tanks, were transported to the Barstow landfill. Prior to loading, rebar was cut away from the broken concrete. The rebar was transported with other scrap steel to a steel scraper. See Section 6.1 for more information about recycling steel from the closure.

The drying bed walls were found to have concrete footings below grade that were approximately 30 inches thick. On the east side of the Drying Beds, within 1 foot of the footings, were pipelines that had not yet been pressure tested; and on the west side was the active pipeline that conveyed phosphate cooling tower blowdown to the evaporation ponds. It was decided to leave the footings undisturbed until the pipelines were decommissioned and tested. When field work was suspended in February 1989, the walls on the east, south and west sides of the Drying Beds and about 20 feet of the center wall remained in place.

After the nearby pipelines were tested in November 1989, trenches were dug along the footings so they could be broken up with the hydraulic breaker. Concrete from the footings was then collected in a pile for later disposal. After determining that it was not hazardous, concrete from the footings of the Drying Beds was used as fill material on site at the Topock Compressor Station. The Drying Beds excavation was backfilled by PG&E with local fill material.

5.2 DISPOSAL OF THE PORTABLE TANK CONTENTS

All wastewater generated during Phases 1 and 2 of closure was placed in a 10,000 gallon portable tank. The activities that generated wastewater included pumping sludge and water out of the Chromate Reduction Tank, Transfer Sump and Oil Water Separator; hydroblasting the Drying Beds, Process Pump Tank, Precipitation Tank, Transfer Sump, Chromate Reduction Tank and Oil Water Separator; and pressure testing the pipelines.

At the conclusion of Phase 2, a single sample, 1042-52-11, was collected from the portable tank. Since the wastewater was generated during each of closure steps 2, 3, 4 and 5, the analytical results for this sample are repeated in the data tables for all the steps, Tables 5-1, 6-1, 7-1 and 8-1. Since the concentration of no parameter exceeded the STLCs, the contents were found to be non-hazardous.

In March 1990, at the conclusion of closure, the portable tank was emptied and cleaned. Approximately 510 gallons of floating oil were first pumped out of the tank and into drums. The oil came from a concurrent closure of the non-hazardous oil

water separator. The oil was later transferred by PG&E to its on-site oil recycling tank. This oil is normally transported to California Oil Recyclers in Newark, California. Next, approximately 5,000 gallons of water were removed from the portable tank by vacuum truck. This water was discharged into Evaporation Pond # 1. Then the tank was emptied by vacuum truck and washed out with water. These 2,700 gallons of water were taken to Gibson Oil and Refinery Corporation in Bakersfield. The tank was taken to Chemical Transportation in Wilmington for cleanout.

5.3 SAMPLE LOCATIONS AND METHODOLOGIES

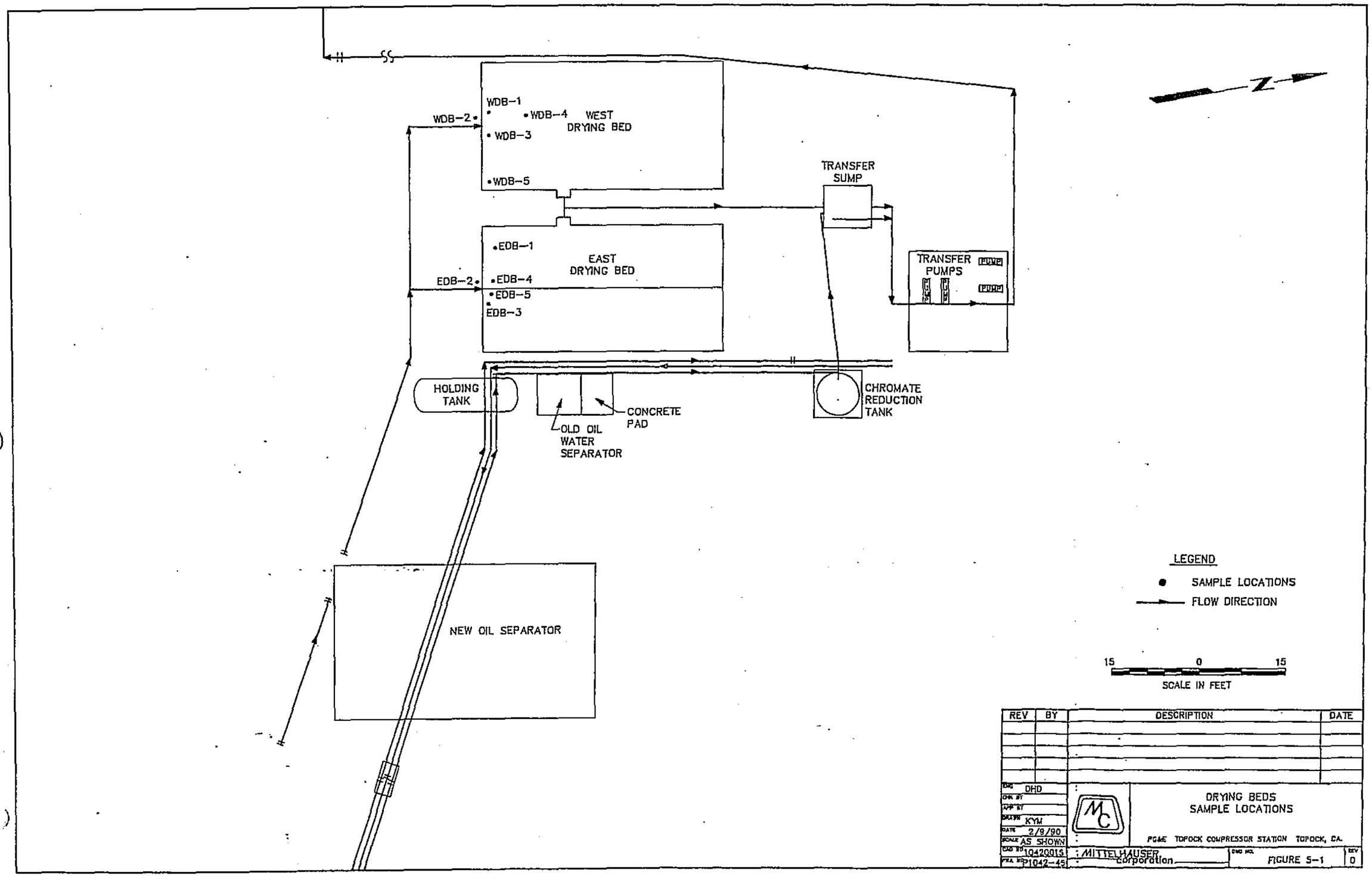
Two sludge (dry solids) samples were taken with a trowel and placed in Zip-lock bags. The trowel was cleaned between samples with a brush and Alconox laboratory detergent and rinsed with deionized water. Sample locations are shown in Figure 5-1.

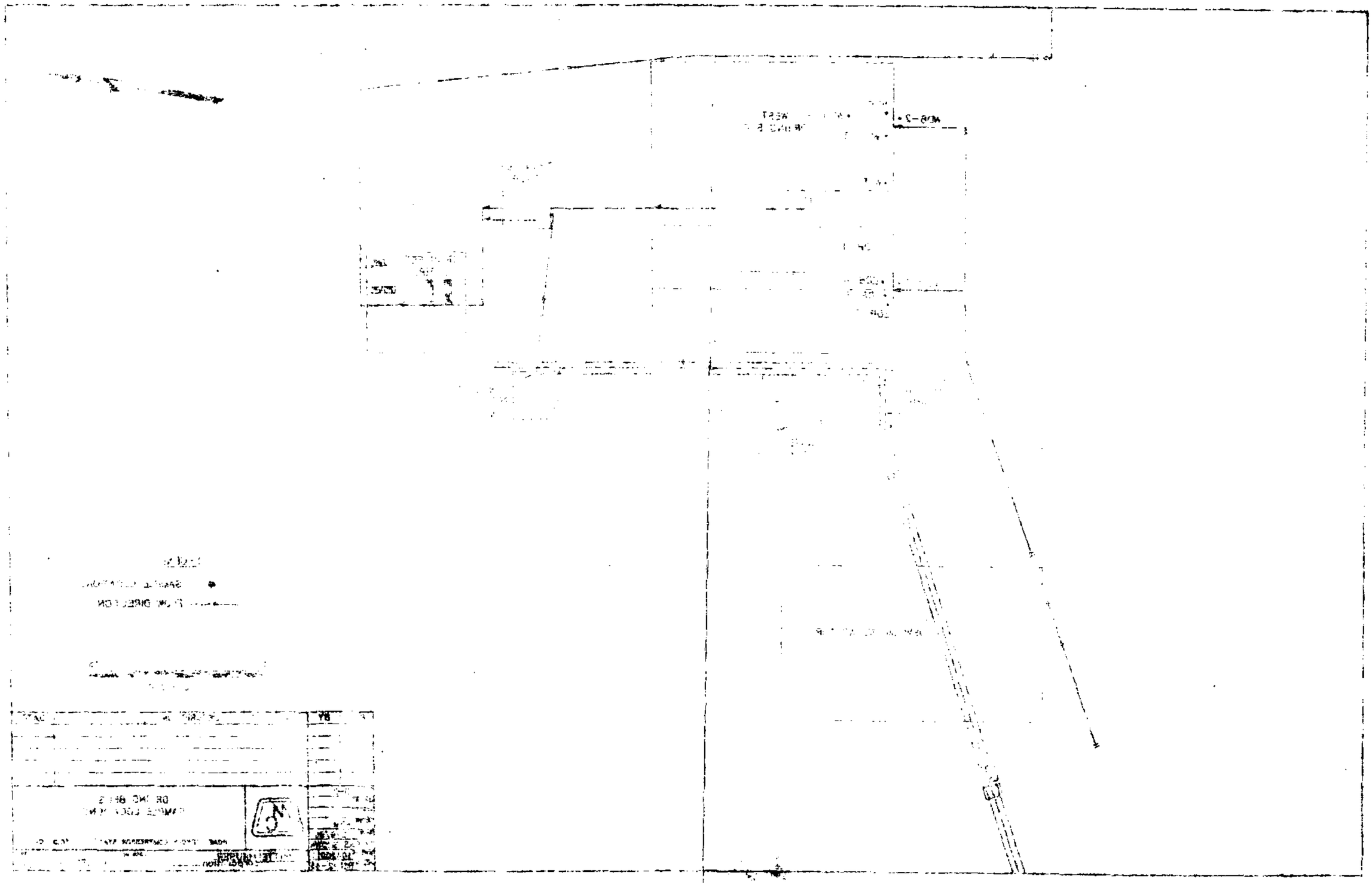
Four concrete samples were taken from the Drying Beds, one from the floors and one from the tops of the walls of each of the two drying bed. The latter samples were from above the sludge level and therefore represent background conditions. Locations of the concrete samples are shown in Figure 5-1. The samples, which were selected from broken pieces of concrete from the walls and floors, were picked up by hand in inverted Zip-lock bags. The Zip-lock bags then served as the sample container. The samples were approximately 1-inch thick and included the old upper surface of the floor. Some pieces had a sand slurry coating, and some of the pieces with this coating had red rust between the sand grains.

Four soil samples were taken from the soil surface after the concrete was broken up. The soil samples were collected with a trowel which was cleaned between samples with a brush and Alconox laboratory detergent and rinsed with deionized water. The soil sample locations are shown in Figure 5-1. They were taken from the deep (south) ends of the west and east drying beds: WDB-1 was near a large floor crack and WDB-2 was near the former sump of the west drying bed; EDB-1 and EDB-2 were near the sumps of the east drying bed.

5.4 ANALYTICAL DATA

Analytical data for samples from the sludge Drying Beds are presented in Table 5-1.


WDB-1
WDB-2
WDB-4
WEST DRYING BED
WDB-3
WDB-5
TRANSFER SUMP
EDB-1
EAST DRYING BED
EDB-2
EDB-4
EDB-5
EDB-3
TRANSFER PUMPS
PUMP
PUMP
HOLDING TANK
CONCRETE PAD
OLD OIL WATER SEPARATOR
CHROMATE REDUCTION TANK
NEW OIL SEPARATOR
N
LEGEND
SAMPLE LOCATIONS
FLOW DIRECTION
15 0 15
SCALE IN FEET
REV
BY
DESCRIPTION
DATE
DHD
KYM
2/8/90
AS SHOWN
10420015
21042-45
DRYING BEDS
SAMPLE LOCATIONS
PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.
MITTELHAUSER corporation
FIGURE 5-1
0



5.5 CONCLUSIONS

Concentrations of total metals in the sludge samples were less than the TTLCs so the sludge was not hazardous. Water from hydroblasting the Drying Beds was pumped into the portable tank; disposal of the contents of the portable tank is described in Section 8.5.

Concentrations of total metals in the four concrete samples were less than the TTLCs so the concrete was also found to be non-hazardous. The concrete was disposed of in the San Bernardino County Class III Landfill near Barstow, California, as described in Section 5.1.

With two exceptions, concentrations of all parameters in the soil sample were less than the background standards. However, for both exceptions the analytical results are not considered to be evidence of contamination. The chromium concentration in one duplicate of Sample 1042-44-11 was 47 mg/kg. However, this result is only de minimus greater than the background standard of 43 mg/kg and the concentration of 37 mg/kg in the other duplicate is less than the background standard. The lead concentration in Sample 1042-44-10 was 17 mg/kg, considered only de minimus greater than the background standard of 16 mg/kg. PG&E concludes from these data that the subsoil beneath the Drying Beds is not contaminated, and the Drying Beds have been "clean" closed. As described in Section 5.1, the excavation was backfilled.

5.6 DEVIATIONS FROM THE CLOSURE PLAN

Rather than chiseling the concrete samples by hand from the floor of the Drying Beds, they were selected from the pile of broken pieces of concrete left by the hydraulic breaker. This deviation is not significant since the samples still included the upper surface of the Drying Beds.

Even though the Closure Plan did not require it, the Sludge Drying Beds were hydroblasted. After the sludge was removed with shovels and brooms, some light green sludge still adherred to the concrete of the Drying Beds. PG&E decided to hydroblast the concrete to remove these traces of sludge before the concrete was broken up and disposed of.

Finally, there was a minor deviation from page 3-2 of Appendix B, the Sampling and Analysis Plan. Table 3-1 on that page specifies collection of soil samples from beneath the Drying Beds by hand driving one brass tube and one fiberglass tube. Soil

under the Drying Beds was found to be slightly consolidated and very rocky, making it impossible to hand drive a sample tube. Therefore, these samples were collected by hand with a trowel and placed in Zip-lock bags.

MITTELHAUSER corporation

PG&E — Closure Certification Report
Topock Compressor Station — March 1990
Phases 1 & 2, HWMF Closure — 104205.WK1

TABLE 5-1
DRYING BEDS – ANALYSIS RESULTS

Sample ID	Location	Depth	Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se	Elec Cond	F	Hex Cr	Oil & Gr	pH	TDS
EPA METHODS			6010	6010	6010	6010	6010	6010	6010	7421	6010	6010	6010	7841	6010	6010	7060	7470	7740		340.2	7196		9045	
SLUDGE																									
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	0.3	0.002	0.5		1.0	1.0	10.0		
TTLC, mg/kg			500	10000	75	100	2500	8000	2500	1000	3500	2000	500	700	2400	5000	500	20	100		18000	500			
1042-44-01	WDB-1	---	ND	200	ND	0.6	680	5.9	40	25	ND	12	ND	ND	20	320	6.67	0.103	ND	NA	2750	2.3	NA	8.35	NA
1042-44-02	EDB-1	---	1.0	200	ND	0.8	2100	6.0	44	36	ND	12	ND	ND	24	760	9.32	0.081	ND	NA	940	15.2	NA	8.02	NA
WATER																									
DETECTION LIMITS			0.2	0.1	0.005	0.005	0.05	0.05	0.02	0.05	0.1	0.04	0.05	0.1	0.2	0.05	0.005	0.001	0.01		0.1	0.01	5		
STLC, mg/l			15	100	0.75	1.0	560	80	25	5.0	350	20	5	7.0	24	250	5.0	0.2	1.0		180	5			
1042-52-11	PORTABLE TANK		ND	1.1	ND	0.055	4.6	ND	1.2	0.5	11	0.05	ND	ND	ND	2.8	ND	0.001	ND	NA	8.1	ND	325	6.9	3548
CONCRETE																									
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	0.3	0.002	0.5		1.0	1.0	10.0		
TTLC, mg/kg			500	10000	75	100	2500	8000	2500	1000	3500	2000	500	700	2400	5000	500	20	100		18000	500			
1042-44-03	WDB-2	---	ND	120	ND	0.9	21	4.0	ND	7.4	ND	11	ND	ND	13	41	3.16	0.067	ND	NA	180	ND	NA	8.79	NA
1042-44-04	EDB-2	---	ND	110	ND	0.5	52	3.6	8.7	2.0	ND	14	ND	ND	12	42	4.03	0.073	ND	NA	380	2.7	NA	9.76	NA
1042-44-05	EDB-3	---	ND	110	ND	0.5	120	5.4	ND	5.0	ND	5.8	ND	ND	13	150	3.92	0.077	ND	NA	564	ND	NA	11.16	NA
1042-44-06	WDB-3	---	ND	130	ND	0.8	45	4.4	ND	23	ND	7.5	ND	ND	21	60	3.74	0.231	ND	NA	624	3.9	NA	12.19	NA
SOIL																									
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	0.3	0.002	0.5		1.0	1.0	10.0		
BACKGROUND STANDARDS			7.2	373	1	0.6	43	19	20	16	1.7	53	1	5	50	135	4.4	0.123	0.5		914				
1042-44-07	WDB-4	0'	ND	210	ND	0.5	30	8.3	3.1	5.2	ND	11	ND	ND	20	100	1.84	0.012	ND	NA	310	ND	NA	10.21	NA
1042-44-08 DUP-2	WDB-4	0'	0.3	78	ND	0.2	18	2.3	8.1	4.0	0.11	6.5	ND	ND	8.1	93	1.3	0.019	ND	NA	130	ND	NA	10.35	NA
1042-44-09	WDB-5	0'	ND	110	ND	ND	22	7.1	ND	15	ND	7.5	ND	ND	21	33	1.29	0.014	ND	NA	528	ND	NA	10.53	NA
1042-44-10	EDB-4	0'	ND	120	ND	ND	23	6.4	ND	17	ND	12	ND	ND	18	34	1.63	ND	ND	NA	504	ND	NA	11.25	NA
1042-44-11	EDB-5	0'	ND	110	ND	ND	37	8.2	3.8	4.4	ND	9.3	ND	ND	24	53	1.21	0.016	ND	NA	791	ND	NA	10.85	NA
1042-44-11 DUP-1	EDB-5	0'	ND	120	ND	ND	47	8.3	1.8	2.8	ND	9.1	ND	ND	29	56	1.14	0.030	ND	NA	621	ND	NA	10.71	NA
1042-44-11 SPIKE	EDB-5	0'	82%	80%	85%	118%	104%	91%	84%	93%	65%	86%	3%	95%	93%	99%	140%	94.5%	52%	NA	99.39%	98.10%	NA	NA	NA

[illegible]

[illegible]

[illegible]

SECTION 6.0

STEP 3: CHROMATE REDUCTION, PRECIPITATION AND PROCESS PUMP TANKS

6.0 STEP 3: CHROMATE REDUCTION, PRECIPITATION AND PROCESS PUMP TANKS

This section summarizes procedures to close the Chromate Reduction, Precipitation and Process Pump Tanks. The Precipitation and Process Pump Tanks were closed during Phase 1 in December 1988 and February 1989 and the Chromate Reduction Tank during Phase 2 in November 1989 and March 1990. The descriptions below of field and sampling procedures are presented in chronological order.

6.1 FIELD PROCEDURES

When closure began, the Process Pump Tank contained approximately 1/2-inch and the Precipitation Tank approximately 6 inches of dry, pale green sludge. Because access into the steep sided tanks was difficult, the walls above the level of the sludge were hydroblasted from above before the sludge was removed. After hydroblasting, the walls of the Process Pump Tank were clean except for some small areas with a light grey concrete-like deposit on the upper walls. Hydroblasting removed most of the sludge coating on the inner walls of the Precipitation Tank except for a thin pale green film near portions of the tops of the walls.

Hydroblast water from both tanks was transferred to the on-site portable tank. Approximately 50 gallons of sludge from the Process Pump Tank was removed by shovel and placed in plastic-lined drums. The shovels were decontaminated with a water spray and the water was transferred to the Portable Tank. It was not necessary to decontaminate any other equipment since only the shovels came into contact with hazardous waste or high concentrations of hazardous waste constituents. A solid sorbent was placed in the drums to absorb the small amount of free water. The drums were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

The 1,000-gallon Process Pump Tank was moved with a backhoe to the Sludge Drying Beds for further hydroblasting and rinsing. There were rust stains, some moisture, a very thin film of pale green solids, and peeling paint on the concrete foundation after the Process Pump Tank was removed. The foundation was scraped with a shovel and water washed. The pale green solids and peeled paint were removed, leaving paint and rust stains and a visually clean surface.

Panels of the upper wall of the 15,000-gallon Precipitation Tank were cut away with a cutting torch. These panels, the inner cylinder and catwalk were moved to the Sludge

Drying Beds for additional hydroblasting. Five drums of sludge with a minor amount of water were removed by shovel from the remaining 4-foot-high base of the Precipitation Tank. The shovels were decontaminated with a water spray and the water was transferred to the Portable Tank. It was not necessary to decontaminate any other equipment since only the shovels and brooms came into contact with hazardous waste or high concentrations of hazardous waste constituents. Solid sorbent was also placed in these drums to absorb free water. All drums of sludge were labeled with hazardous waste decals that read: "Hazardous waste solid, NOS ORM-E, Chrome soil, NA 9189." The drums were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

After the sludge was removed and it was cleaned, the lower portion of the Precipitation Tank was moved by the backhoe to the Sludge Drying Beds.

During the time that the steel panels were being cut and removed from the upper portion of the Precipitation Tank, a small amount of water and greenish-yellow sludge was found oozing out from under the north side of the Precipitation Tank onto the concrete foundation. After the Precipitation Tank was thoroughly hydroblasted on the Sludge Drying Beds, small holes were discovered in the floor in what had been the north side. Presumably contaminated soil was removed adjacent to the Precipitation Tank's foundation to a depth of 6 inches and placed in the roll-off bin. As described in Section 6.2.4, soil samples were taken at depths of 6, 12 and 18 inches after this soil was removed.

After removal of the Precipitation Tank, its foundation was covered with loose rust and soil. The rust and soil were scraped off with shovels and the surface was water washed. After cleaning, the surface was moderately rust stained.

Adjacent to the Precipitation Tank was a 4' by 6' concrete pad with an 8" curb. A small sodium hydroxide solution tank had been stored in the pad. It contained some blow sand and peeled paint which was removed with a shovel, and the pad was washed with a water spray. The solids and wash water were placed in a drum and sorbent added to absorb free water. The wash water was found to have a pH of 6-7 as measured with pH paper. It was therefore concluded that the water wash sufficiently removed any possible traces of sodium hydroxide.

The cut pieces of the Precipitation and Process Pump Tanks were hydroblasted and inspected on the Sludge Drying Beds.

The interior surfaces of the tanks were cleaned of virtually all pale green sludge. As described in the next section, the hydroblast water was collected at the conclusion of hydroblasting. The cleaned tank pieces were cut up into transportable dimensions, removed from the Sludge Drying Beds and placed in a staging area.

In February 1989, the cleaned tank pieces were transported to American Metal Recycling, Inc. for recycling. A letter dated March 8, 1989, from that company documents that this steel was received and recycled. The letter is presented in Appendix D.

After they were cleaned, the concrete foundations of the Process Pump and Precipitation Tanks and the small sodium hydroxide pad were broken up with a hydraulic hammer. The foundation of the Process Pump Tank was competent with no evidence of leakage in the gravel layer beneath the foundation. The foundation of the Precipitation Tank was poured in two layers, each about 1 foot thick. Each layer contained a large amount of rebar, some up to 1 inch in diameter. The octagon foundation of the Precipitation Tank had a large footing (2-3 feet thick by 1 foot wide) beneath its perimeter.

After the concrete was broken up, concrete and subsoil samples were taken from both tank areas. Rebar was cut away from the broken concrete and the concrete was left in place until field work resumed after the analytical results were available in February 1989. At that time an estimated 125 cubic yards of concrete, including approximately 30 cubic yards from the foundations of the Precipitation and Process Pump Tanks, were transported to the San Bernardino County Landfill near Barstow for disposal as a Class III waste.

The area beneath the tanks was graded but not backfilled after the concrete was removed. This left a slight depression, approximately 2 feet deep at the deepest. As described in Sections 6.2.4 and 6.4, the first round soil samples indicated soil contamination beneath the Process Pump and Precipitation Tanks. A few inches of soil were removed and a second round of soil samples was collected. These samples indicated that all contamination had been removed, so the area was backfilled to grade with local material. The soil that was removed was placed in a roll-off bin. The contents of the roll-off bin were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

Closure of the Chromate Reduction Tank began in November 1989. Sludge and water was first pumped into the

portable tank and the Chromate Reduction Tank was hydroblasted. The hydroblast water was also pumped to the portable tank. Disposal of the contents of the portable tank is described in Section 5.2.

The tank was lifted out of the 4-foot-deep hole in which it sat and placed in the scrap area south of the compressor station. The concrete footings of the Chromate Reduction Tank were then broken up with the hydraulic hammer. The footings were upside-down "Ts" in cross section, approximately 2 feet deep and wide and 8 feet long. After sampling, the footing concrete was removed with a backhoe and separately stockpiled. After determining that it was not hazardous, the concrete was used as fill material on site at the Topock Compressor Station.

The soil floor of the hole in which the Chromate Reduction Tank sat was unlined. There was a "bathtub ring" on the walls of the hole and the soil floor appeared compacted, as if water had stood in the hole. Although it was not known that the tank had leaked, the soil could have been contaminated. For that reason, approximately 1 foot of soil was removed over the entire floor and disposed of as a hazardous waste. The soil was placed in a roll-off bin. The contents of the roll-off bin were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

After removal of the 1 foot of soil, a small trench was dug at the bottom of the excavation. The soil was slightly moist, very rocky and not visibly contaminated. Samples were taken from a wall of the trench at depths of 6, 12 and 18 inches.

The Chromate Reduction Tank was inspected in the scrap area south of the compressor station. Even though it had been hydroblasted, it still had some green sludge adhering to its inside surface, some of which was stuck to the surface and could not easily be removed by hand with a sharp object. The bottom of the tank had a 2-foot-square fiberglass patch on the inside and a 1-foot-diameter welded steel patch on the outside. The tank appeared to be half of a horizontal cylindrical tank that had had a pipe connected to one end (now the bottom of the tank). Since the tank still had some green sludge adhering to its inside surface and it did receive chromium VI, it was cut up and disposed of as a hazardous waste. The pieces of the tank were placed in a roll-off bin. The contents of the roll-off bin were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

The excavation of the Chromate Reduction Tank was also inspected. The soil on the south wall was stained with what appeared to be oil, presumably from the old oil water separator. The stain extended from 1 inch to 1 foot below the former floor of the excavation. Most of the staining was near the southwest corner of the excavation.

During early 1990, PG&E removed the wooden shoring from the walls of the excavation and backfilled the excavation with local fill material.

6.2 SAMPLE LOCATIONS AND METHODOLOGIES

Sampling locations and methodologies are described in this section. The analytical results and conclusions based on the results are presented in Sections 6.3 and 6.4, respectively.

6.2.1 Sludge Samples

Sample 1042-42-1 was of the sludge in the Process Pump Tank. The location, PPT-1, is shown in Figure 6-1. The sludge was a light green, dry solid that was approximately 1/2-inch-deep on the bottom of the tank. Sludge in the Precipitation Tank was not sampled directly since the tank was unsafe to enter due to its height. The sludge in both tanks should be identical since the Process Pump Tank simply served as a pump sump for the slurry effluent from the Precipitation Tank.

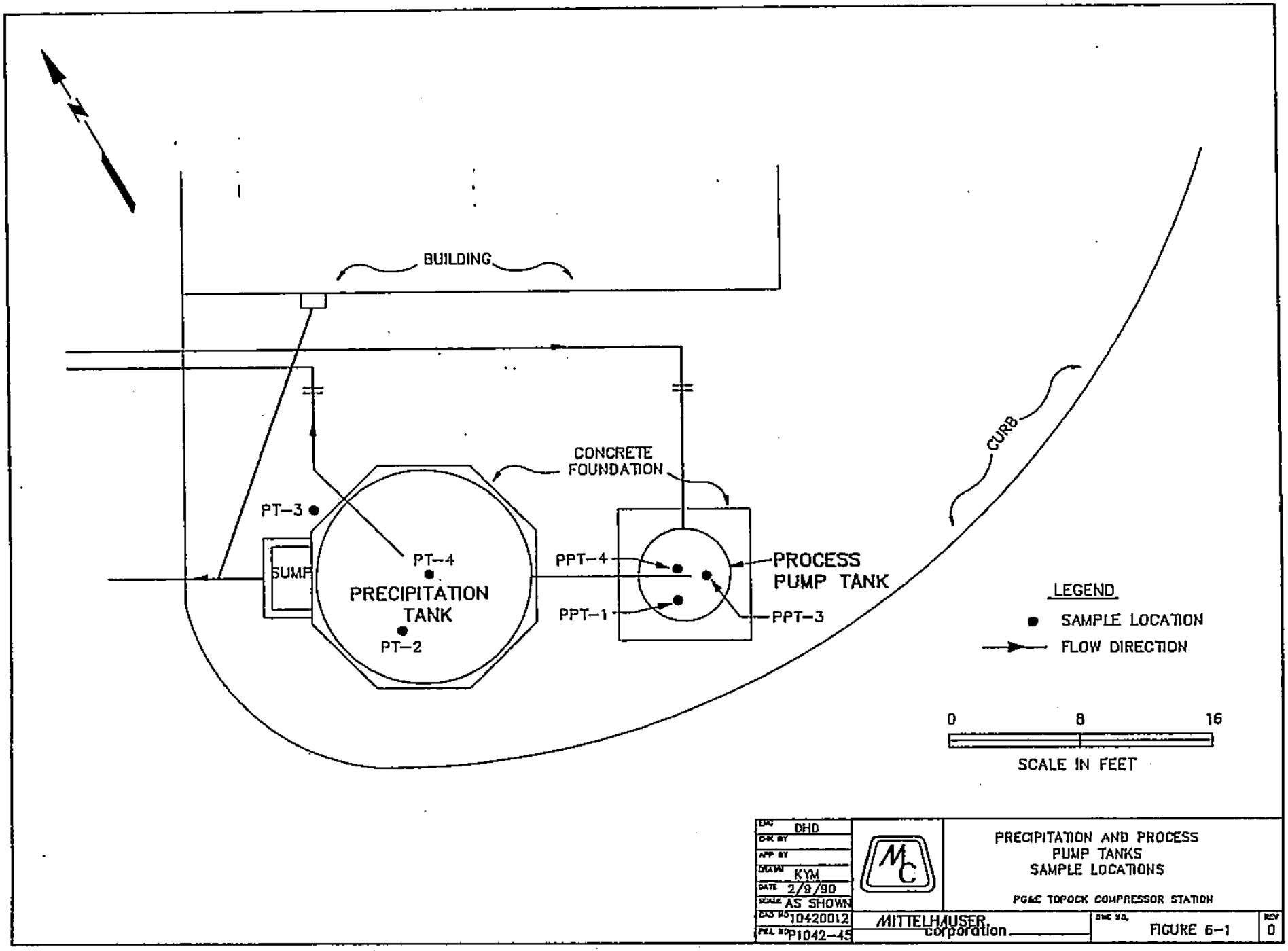
The sludge from both tanks was later placed in drums for disposal. Sample 1042-42-21 was taken from the drums to characterize the sludge for disposal. This samples represents the sludge from both the Process Pump Tank and the Precipitation Tank.

6.2.2 Water Samples

After the lower portions of the Process Pump Tank and the Precipitation Tank were hydroblasted on the Drying Beds, samples were collected of the water standing in the tanks. Sample 1042-42-02 was from hydroblasting the Process Pump Tank and Sample 1042-42-03 from hydroblasting the Precipitation Tank.

Two water samples were taken from the Chromate Reduction Tank. Sample 1042-52-1 was collected from the tank before any water was pumped out. After the water and sludge in the Chromate Reduction Tank were pumped out and the tank was hydroblasted, Sample 1042-52-2 was collected of the hydroblast water.

At the conclusion of Phase 2, a single sample, 1042-52-11, was collected from the portable tank. Analytical


BUILDING
CONCRETE FOUNDATION
CURB
PT-3
PT-4
PT-2
SUMP
PRECIPITATION TANK
PPT-4
PPT-1
PPT-3
PROCESS PUMP TANK
LEGEND
SAMPLE LOCATION
FLOW DIRECTION
0
8
16
SCALE IN FEET
DRG DHD
CHK BY
APP BY
DRAWN KYM
DATE 2/9/90
SCALE AS SHOWN
CAD NO 10420012
PRJ NO P1042-45
MITTELHAUSER corporation
PRECIPITATION AND PROCESS PUMP TANKS SAMPLE LOCATIONS
PG&E TOPOCK COMPRESSOR STATION
DWG NO. FIGURE 6-1
REV 0

MITTELHAUSER corporation

PG&E — Closure Certification Report
Topock Compressor Station — March 1990
Phases 1 & 2, HWMF Closure — 104206.WK1

TABLE 6-1

CHROMATE REDUCTION, PRECIPITATION & PROCESS PUMP TANKS – ANALYSIS RESULTS

Sample ID	Location	Depth	Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se	Elec Cond	F	Hex Cr	Oil & Gr	pH	TDS
EPA METHODS			6010	6010	6010	6010	6010	6010	6010	7421	6010	6010	6010	7841	6010	6010	7060	7470	7740		340.2	7196		9045	
SLUDGE																									
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	0.3	0.002	0.5		1.0	1.0	10.0		
TTLC, mg/kg			500	10000	75	100	2500	8000	2500	1000	3500	2000	500	700	2400	5000	500	20	100		18000	500			
1042-42-01	PPT-1	—	ND	360	ND	4.6	26000	4.7	380	91	110	9.5	ND	ND	58	6200	175	0.279	ND	NA	43200	ND	NA	7.90	NA
1042-42-21	TNK/DRUM	—	72	390	ND	2	24000	3	430	80	500	16	ND	ND	73	16000	80	0.460	ND	NA	2800	9.3	NA	9.35	NA
WATER																									
DETECTION LIMITS			0.2	0.1	0.005	0.005	0.05	0.05	0.02	0.05	0.1	0.04	0.05	0.1	0.2	0.05	0.005	0.001	0.01		0.1	0.01	5		
STLC, mg/l			15	100	0.75	1.0	560	80	25	5.0	350	20	5	7.0	24	250	5.0	0.2	1.0		180	5			
1042-42-02	PPT-2	—	ND	ND	ND	0.007	5.1	ND	ND	0.55	ND	ND	ND	ND	ND	1.6	0.048	ND	ND	NA	9.2	ND	NA	6.72	NA
1042-42-03	PT-1	—	ND	ND	ND	0.037	0.38	ND	0.10	0.08	0.18	ND	ND	ND	ND	0.36	0.018	ND	ND	NA	5.0	0.03	NA	8.64	NA
1042-52-01	CRT-1	—	ND	0.4	ND	0.018	ND	ND	0.29	ND	18.1	ND	ND	ND	ND	0.24	0.054	ND	ND	NA	27	ND	ND	7.66	8300
1042-52-02	CRT-2	—	ND	8.0	ND	0.057	5.2	ND	0.68	0.50	0.4	ND	ND	ND	ND	1.5	0.055	ND	ND	NA	5.1	ND	19	8.09	1170
1042-52-11	PORT TAN	—	ND	1.1	ND	0.055	4.6	ND	1.2	0.5	11	0.05	ND	ND	ND	2.8	ND	0.001	ND	NA	8.1	ND	325	6.9	3548
CONCRETE																									
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	0.3	0.002	0.5		1.0	1.0	10.0		
TTLC, mg/kg			500	10000	75	100	2500	8000	2500	1000	3500	2000	500	700	2400	5000	500	20	100		18000	500			
1042-42-07	PPT-3	—	ND	170	ND	0.8	84	4.8	7.8	19	ND	10	ND	ND	22	74	8.65	0.026	ND	NA	760	9.6	NA	12.27	NA
1042-42-08	PT-2	—	ND	91	ND	0.7	26	7.9	9.9	26	ND	8.3	ND	ND	13	53	10.9	0.108	ND	NA	560	11.5	NA	12.05	NA
1042-52-03	CRT-3	—	ND	230	ND	ND	42	9	18	10	ND	21	ND	ND	23	47	7.6	0.021	ND	NA	450	6	ND	11.44	NA
SOIL																									
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	0.3	0.002	0.5		1.0	1.0	10.0		
BACKGROUND STANDARDS			7.2	373	1	0.6	43	19	20	16	1.7	53	1	5	50	135	4.4	0.123	0.5		914				
1042-42-13	PPT-4	.5'	ND	81	ND	0.6	31	12	12	29	ND	25	ND	ND	37	76	1.17	0.006	ND	NA	801	ND	NA	9.64	NA
1042-42-14 DUP-2	PPT-4	.5'	ND	12	0.12	0.21	13	2.0	6.3	4.7	0.11	7.1	ND	ND	8.0	14	1.2	0.003	ND	NA	170	ND	NA	9.92	NA
1042-42-15	PPT-4	1'	ND	90	ND	0.7	35	12	14	28	ND	25	ND	ND	37	65	1.11	0.015	ND	NA	599	ND	NA	9.67	NA
1042-42-16	PPT-4	1.5'	ND	120	ND	0.6	50	11	23	29	ND	25	ND	ND	30	71	1.60	ND	ND	NA	548	ND	NA	9.87	NA
1042-42-09	PT-4	.5'	ND	98	ND	0.6	20	9.5	4.1	2.8	ND	20	ND	ND	28	38	0.99	0.018	ND	NA	740	ND	NA	10.33	NA
1042-42-10	PT-4	1'	ND	99	ND	0.7	18	6.4	ND	1.8	ND	17	ND	ND	27	26	1.84	0.023	ND	NA	669	ND	NA	9.86	NA
1042-42-11 DUP-2	PT-4	1'	0.5	19	0.12	0.19	8.6	2.0	5.7	2.5	0.16	7.1	ND	ND	7.9	11	1.1	ND	ND	NA	190	ND	NA	10.18	NA
1042-42-12	PT-4	1.5'	ND	160	ND	0.6	22	8.6	8.0	2.7	ND	22	ND	ND	29	64	1.78	0.007	ND	NA	804	ND	NA	10.23	NA
1042-42-04	PT-3	.5'	ND	98	ND	1.0	27	7.0	20	94	ND	21	ND	ND	28	110	1.28	0.033	ND	NA	8200	ND	NA	10.03	NA
1042-42-05	PT-3	1'	ND	120	ND	1.1	29	9.7	11	33	ND	28	ND	ND	31	46	1.52	0.016	ND	NA	2400	ND	NA	10.13	NA
1042-42-06	PT-3	1.5'	ND	91	ND	ND	51	9.6	9.4	13	ND	26	ND	ND	31	54	1.39	0.032	ND	NA	1100	1.1	NA	10.06	NA
1042-42-20	PPT-4	2'	ND	65	ND	ND	32	13	19	5	ND	33	ND	ND	41	44	1.1	0.020	ND	NA	636	ND	NA	8.68	NA
1042-42-20 DUP-1	PPT-4	2'	ND	65	ND	ND	29	9	15	4	ND	26	ND	ND	32	36	1.2	0.027	ND	NA	664	ND	NA	8.74	NA
1042-42-20 SPIKE	PPT-4	2'	36%	84%	78%	95%	82%	84%	96%	93%	59%	84%	20%	104%	85%	86%	94%	136%	45%	NA	99%	100%	NA	NA	NA
1042-42-19	PPT-4	3'	ND	50	ND	0.5	26	10	16	5	ND	25	ND	ND	38	44	1.3	0.007	ND	NA	576	ND	NA	9.34	NA
1042-42-18	PT-3	2'	ND	110	ND	0.9	38	8	16	10	ND	19	ND	ND	28	45	2.4	0.015	ND	NA	424	ND	NA	11.93	NA
1042-42-17	PT-3	4'	ND	100	ND	ND	26	9	15	6	ND	24	ND	ND	30	34	1.5	ND	ND	NA	421	ND	NA	11.37	NA
1042-52-05	CRT-4	.5'	ND	165	ND	ND	120	10	14	6	ND	19	ND	ND	25	96	4.3	ND	ND	170	380	1	NA	8.42	NA
1042-52-08 DUP-2	CRT-4	.5'	ND	56	0.1	0.20	43	3.0	8.3	1.9	ND	8.1	ND	ND	14	59	1.9	ND	ND	380	650	ND	NA	10.01	NA
1042-52-06	CRT-4	1'	ND	103	ND	ND	23	9	7	2	ND	14	ND	ND	23	47	1.7	ND	ND	65	490	ND	NA	9.03	NA
1042-52-07	CRT-4	1.5'	ND	168	ND	ND	21	10	8	3	ND	18	ND	ND	24	49	2.5	ND	ND	45	400	ND	NA	9.52	NA

CONDITION
WATERMARKED

results for this sample are also presented in Table 6-1. All wastewater generated during Phases 1 and 2 of closure, including that from the Process Pump Tank, Precipitation Tank and the Chromate Reduction Tank, was placed in the portable tank.

6.2.3 Concrete Samples

One sample each was collected from the concrete foundations of the Process Pump Tank, the Precipitation Tank and the Chromate Reduction Tank. These samples, 1042-42-07, 1042-42-08 and 1042-52-03, were collected after the concrete was broken up by a hydraulic hammer. Pieces of broken concrete were gathered by hand from the piles of broken concrete. Pieces were selected that included the inner surface and were approximately 1 inch thick.

6.2.4 Soil Samples

Soil samples beneath the foundations of the Process Pump and Precipitation Tanks were taken in December 1988 by first digging a trench with a backhoe and then scraping the sample out of the trench wall with a trowel. Samples 1042-42-13, 1042-42-15 and 1042-42-16 were taken in this manner at depths of 6, 12 and 18 inches beneath the Process Pump Tank. Sample 1042-42-14 is a duplicate of Sample 1042-42-13 and it was analyzed by the secondary laboratory. The location, PPT-4, of these samples is shown in Figure 6-1. Samples 1042-42-9, 1042-42-10 and 1042-42-12 were taken beneath the Precipitation Tank from depths of 6, 12 and 18 inches. Sample 1042-42-11 is a duplicate of Sample 1042-42-10 and it was analyzed by the secondary laboratory. The location, PT-4, of these samples is shown in Figure 6-1.

As mentioned in the previous section, small holes were discovered in the floor on the northeast side of the Precipitation Tank. After removal of approximately 6 inches of soil adjacent to the Precipitation Tank's foundation, soil samples 1042-42-04, 1042-42-05 and 1042-42-06 were taken from depths of 6, 12 and 18 inches, respectively. The location of these samples, PT-3, is shown in Figure 6-1.

As discussed in Section 6.4, analyses of most of these samples indicated slight contamination. Therefore, in February 1989 several inches of soil were removed and disposed of as hazardous waste. To confirm removal of contaminated soil, samples were taken as before from trenches. Samples 1042-42-20 and 1042-42-19 were taken at depths of 2 and 3 feet, respectively, beneath the former Process Pump Tank foundation. The location, PPT-4, of these samples is the same as the previous samples. Samples 1042-42-18 and 1042-42-17 were taken at depths of 2 and

4 feet, respectively, beneath the former Precipitation Tank foundation. The location, PT-3, of these samples is also the same as the previous samples. When digging both sample trenches for these samples, the backhoe reached bedrock at depths of 3 feet under the Process Pump Tank and 4 feet under the Precipitation Tank.

As described in Section 6.1, approximately 1 foot of soil was removed over the entire floor of the Chromate Reduction Tank. After removal of the soil, a sample trench was dug with a backhoe. Samples 1042-52-5, 1042-52-6 and 1042-52-7 were taken from a wall of the trench at depths of 6, 12 and 18 inches, respectively. Sample 1042-52-8 is a duplicate of 1042-52-5 and was analyzed by the secondary laboratory. The location, CRT-4, of these samples is shown in Figure 6-2.

6.3 ANALYTICAL DATA

Analytical data for the Process Pump Tank, Precipitation Tank and the Chromate Reduction Tank are presented in Table 6-1.

6.4 CONCLUSIONS

Concentrations in six soil samples taken when closure started in December 1988 exceeded the background standards for cadmium, chromium, copper, lead and fluoride. All of these samples were collected beneath the Process Pump Tank and the Precipitation Tank. Concentrations that exceeded or equaled the background standards are listed below.

Sample No.	Location	Cadmium	Chromium	Copper	Lead	Fluoride
Background Standard		0.6	43	20	16	914
1042-42-15	PPT-4	0.7	-	-	28	-
1042-42-16	PPT-4	0.6	50	23	29	-
1042-42-04	PT-3	1	-	20	94	8200
1042-42-05	PT-3	1.1	-	-	33	2400
1042-42-06	PT-3	-	51	-	-	1100
1042-42-10	PT-4	0.7	-	-	-	-

The laboratory experienced some difficulties analyzing fluoride, consequently, the fluoride concentrations for Samples 1042-42-04, 1042-42-05 and 1042-42-06 are suspect. However, since concentrations of other parameters in these samples exceeded the background standards, the samples were not reanalyzed for fluoride.

In February 1989, several inches of soil under the Process Pump and Precipitation Tanks were removed and disposed of as hazardous waste. The soil was placed in a roll-off bin. The contents of the roll-off bin were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

To determine if the contaminated soil was completely removed, confirmation samples were taken as before from trenches in the bottom of the excavation. Samples 1042-42-20 and 1042-42-19 were taken at depths of 2 and 3 feet, respectively, beneath the former Process Pump Tank foundation. The location, PPT-4, of these samples is the same as the previous samples. Samples 1042-42-18 and 1042-42-17 were taken at depths of 2 and 4 feet, respectively, beneath the former Precipitation Tank foundation. The location, PT-3, of these samples is also the same as the previous samples. When digging both sample trenches for these samples, the backhoe reached bedrock at a depth of 3 feet under the Process Pump Tank and 4 feet under the Precipitation Tank.

Three of the confirmation samples indicated that the contaminated soil had been removed. The fourth sample, 1042-42-18 from a depth of 2 feet at location PT-3, had a cadmium concentration of 0.9 mg/kg, which slightly exceeds the background standard of 0.6 mg/kg. No other first round confirmation sample associated with the Chromate Reduction, Precipitation or Process Pump Tanks had concentrations of any parameter that exceeded the background standards.

Although the cadmium concentration of 0.9 mg/kg is only slightly greater than the background standard, soil from this area was removed in March 1990. As described in Section 8.4 and Tables 8-3 and 8-4, concentrations of several metals in nearby Sample 1042-43-20 from location PH-10, just beneath pipeline section H, also exceeded the background standards. In March 1990, Sample 1042-43-26 was collected after removal of soil in the area of PT-3 and PH-10. The concentration of cadmium in this sample was 0.06 mg/kg, much less than the background standard of 0.6 mg/kg. This indicates that all contaminated soil in this area was removed and this area should be considered "clean" closed.

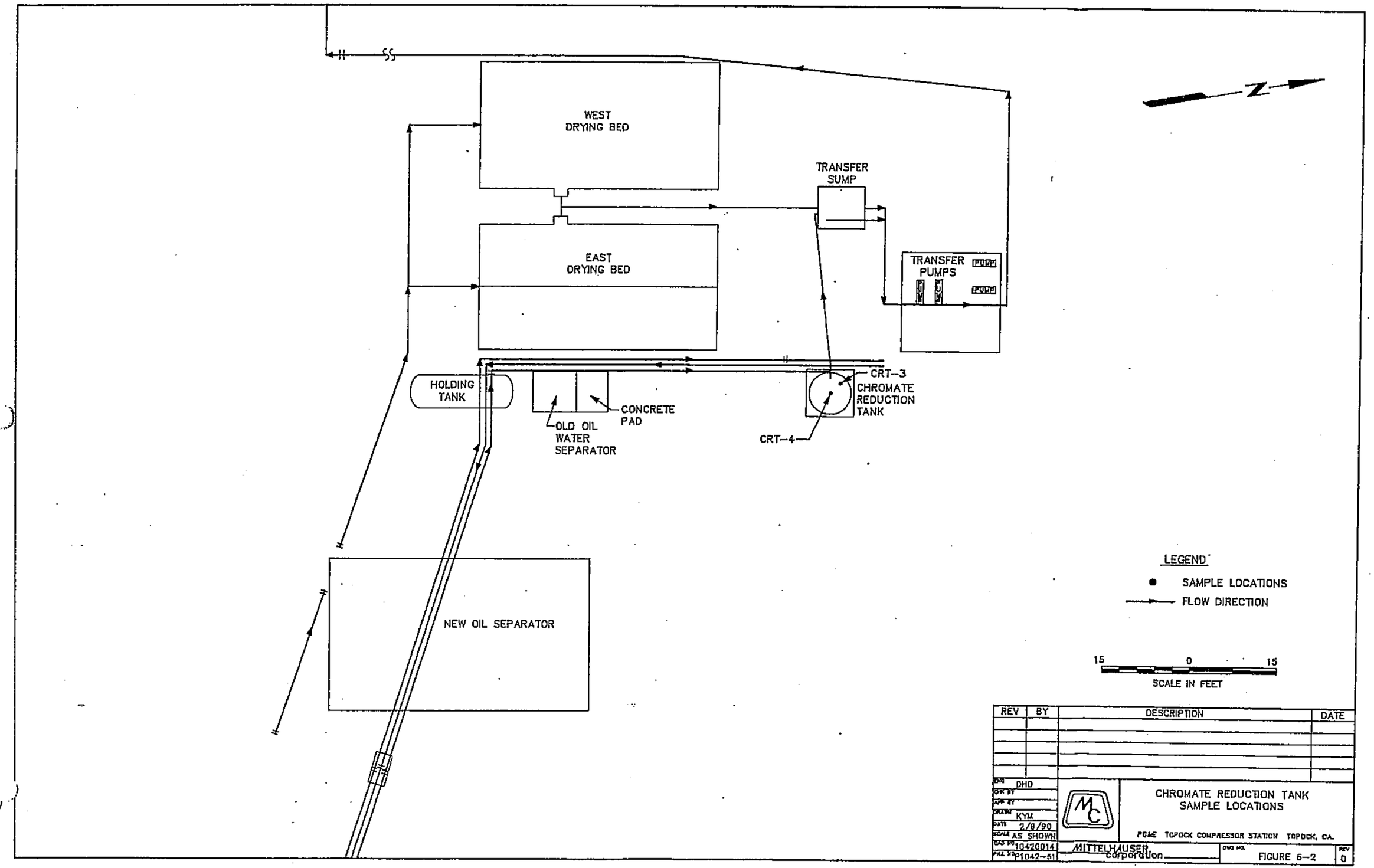
6.5 DEVIATIONS FROM THE CLOSURE PLAN

Sludge from the Chromate Reduction, Precipitation and Process Pump Tanks was removed, transported and disposed of as a hazardous waste. Liquid from the tanks, along with wastewater from other closure steps, was pumped into the portable tank. As described in Section 5.2, analytical results for Sample 1042-52-11

indicated that water in this tank was not hazardous. There was a slight deviation from the Closure Plan because part of this water was placed in the Evaporation Ponds and the rest was taken to Gibson Oil and Refinery Corporation in Bakersfield. In a similar manner, hydroblast wastes were placed in the portable tank and, after analysis showed that the wastewater was not hazardous, were disposed of in the Evaporation Ponds and taken to Gibson Oil and Refinery Corporation.

In another minor deviation from the Closure Plan, concrete from the foundations of all three tanks was sampled, not by chiseling chips from the concrete, but by collecting broken pieces of concrete after the foundations were broken up by the hydraulic hammer.

After determining that it was not hazardous, concrete from the footings of the Chromate Reduction Tank was used as fill material on site at the Topock Compressor Station.


WEST DRYING BED
EAST DRYING BED
TRANSFER SUMP
TRANSFER PUMPS
PUMP
PUMP
HOLDING TANK
OLD OIL WATER SEPARATOR
CONCRETE PAD
CRT-3
CHROMATE REDUCTION TANK
CRT-4
NEW OIL SEPARATOR
N
LEGEND
SAMPLE LOCATIONS
FLOW DIRECTION
15 0 15
SCALE IN FEET
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BY
DESCRIPTION
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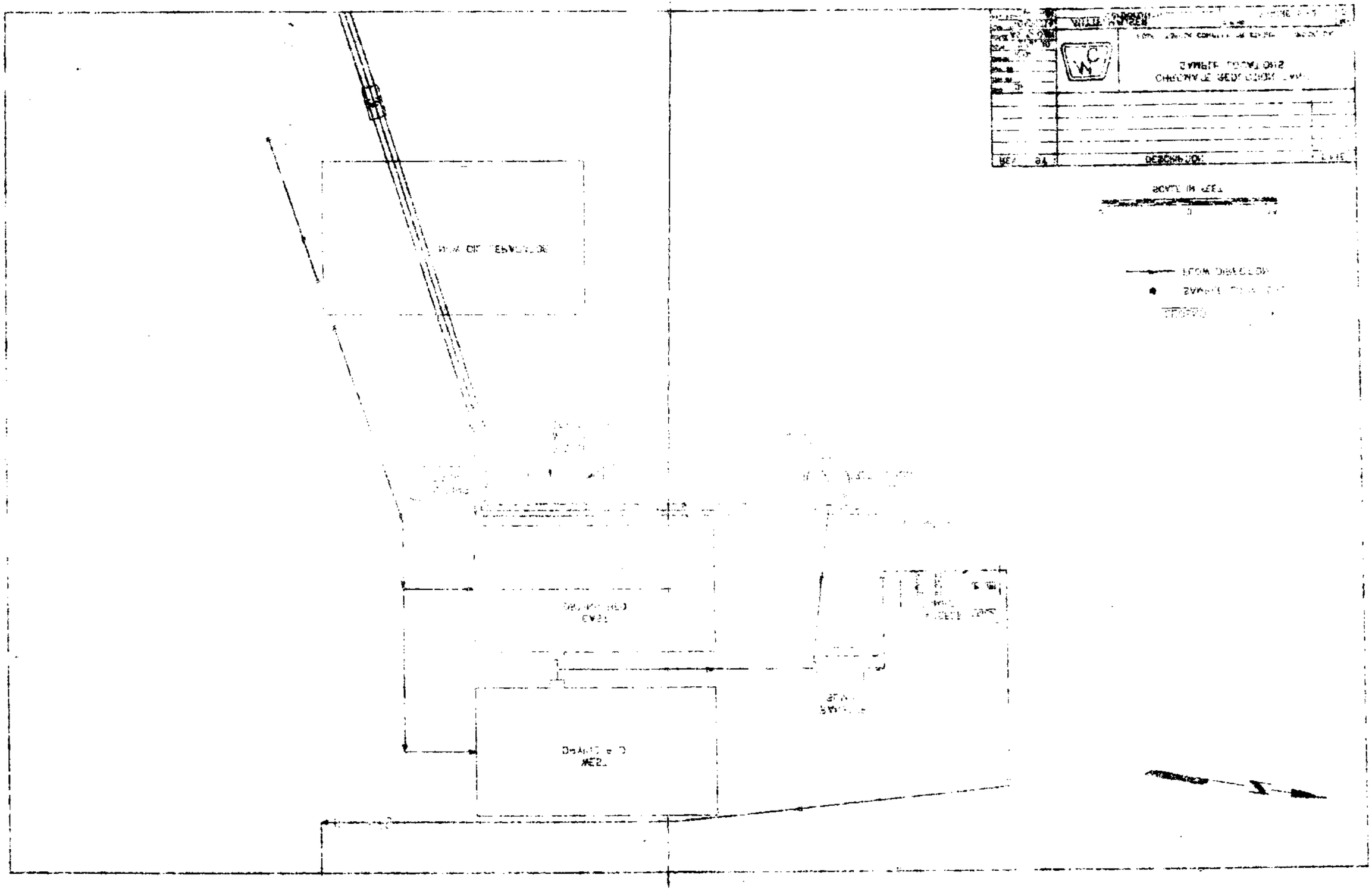
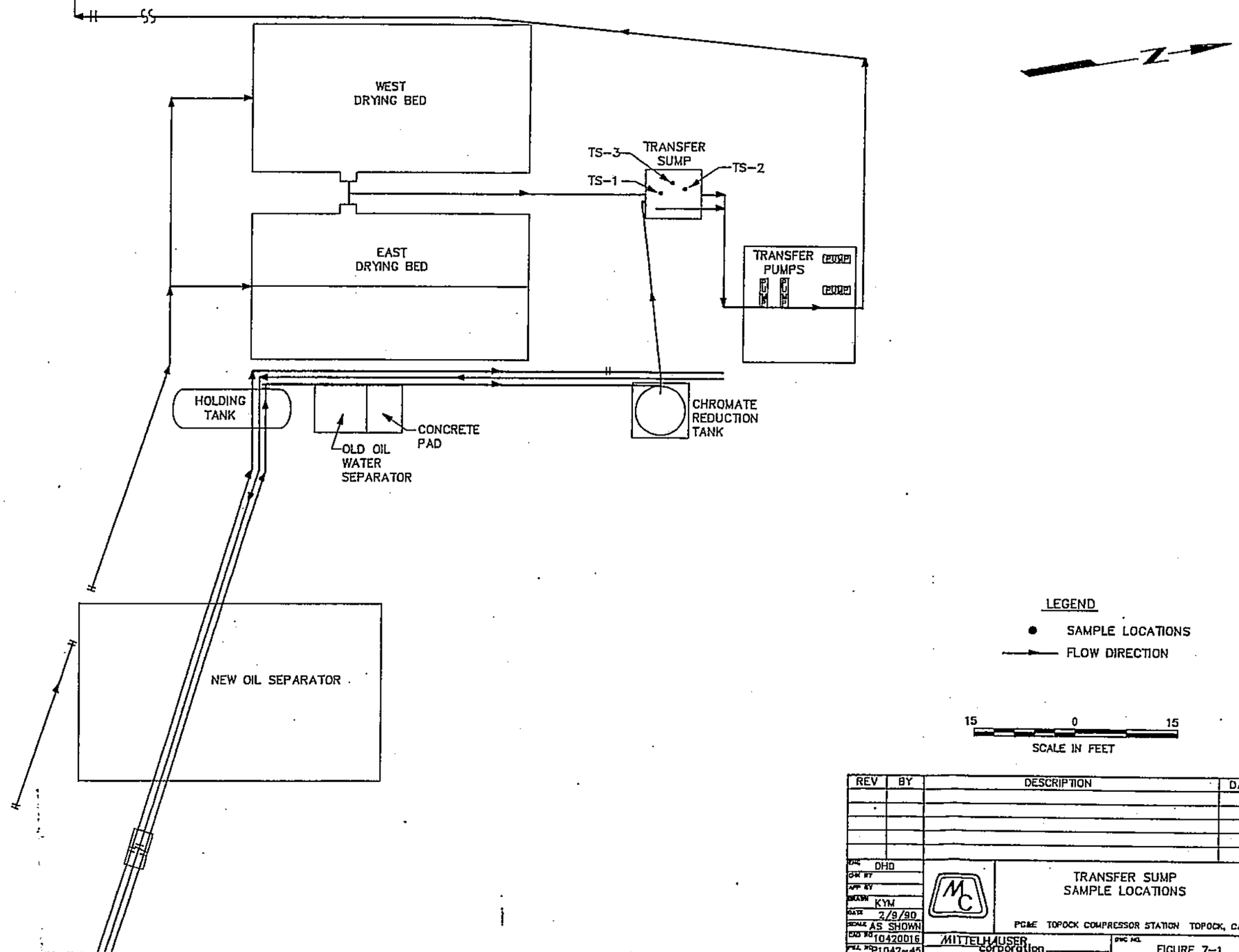
AS SHOWN
10420014
21042-51
CHROMATE REDUCTION TANK
SAMPLE LOCATIONS
PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.
MITTELHAUSER corporation
FIGURE 6-2
0





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APP BY
DRAWN KYM
DATE 2/9/90
SCALE AS SHOWN
CAD NO 10420016
PROJ. NO P1042-45

MITTELHAUSER corporation

TRANSFER SUMP
SAMPLE LOCATIONS

PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.

DWG NO. FIGURE 7-1

REV 0

SECTION 7.0

STEP 4: TRANSFER SUMP

7.0 STEP 4: TRANSFER SUMP

This section summarizes procedures to close the Transfer Sump. It was closed during Phase 2 in November 1989 and March 1990.

7.1 FIELD PROCEDURES

The Transfer Sump was exposed by removing the overlying soil down to the top of the sump and by digging trenches on all sides down to the depth of the bottom of the sump. A manhole made up of interlocking concrete rings was sitting on top of the Transfer Sump and it extended to 2 feet above grade. Soil around the manhole was visibly contaminated with oil, presumably from oily water that had overflowed from the manhole. Approximately 2 cubic feet of this visibly contaminated soil was disposed of as a hazardous waste. The soil was placed in a roll-off bin. The contents of the roll-off bin were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

The Transfer Sump was a 1,500-gallon prefabricated concrete septic tank with a one-piece removable top. The sump itself had no seams and the top was sealed to the sump with asphalt. There was no visible evidence of cracks in the sump or of leaks in the surrounding soil.

Water and sludge in the Transfer Sump were pumped into the portable tank. The lid was lifted off and placed in a separate portion of the former Drying Beds area. The interior of the Transfer Sump was hydroblasted and the hydroblast water was transferred to the portable tank. Disposal of the contents of the portable tank is described in Section 5.2.

The Transfer Sump was broken up in place with a hydraulic hammer on a backhoe and placed next to the lid in the former Drying Beds area. In early 1990, after the analytical results indicated that the concrete was not hazardous, PG&E used the concrete as fill material on site at the Topock Compressor Station. The Transfer Sump excavation was then backfilled by PG&E with local fill material.

7.2 SAMPLE LOCATIONS AND METHODOLOGIES

A sample of the hydroblast water was taken directly from the bottom of the Transfer Sump. The water sample was collected at location TS-1 as shown in Figure 7-1.

A concrete sample was collected from the pile of broken concrete after the broken up Transfer Sump was removed from the excavation. The location of the concrete sample, TS-2, is shown in Figure 7-1. The sample, which was selected from broken pieces of concrete from the walls and floor, was picked up by hand with a Zip-lock bag. The Zip-lock bag then served as the sample container. The sample was representative of the entire thickness of the Transfer Sump wall and included the old inner surface of the sump. The inner surface was clean concrete with virtually no staining or discoloration.

One soil sample was collected from the bottom of the excavation after the Transfer Sump was removed. The soil sample was collected with a trowel which had been cleaned with a brush and Alconox laboratory detergent and rinsed with deionized water. The soil sample location, TS-3, is shown in Figure 7-1.

7.3 ANALYTICAL DATA

Analytical data for samples from the sludge Drying Beds are presented in Table 7-1.

7.4 CONCLUSIONS

Concentrations of all analytes in the hydroblast water were less than the STLCs. The hydroblast water was therefore not hazardous. The hydroblast water was pumped into the portable tank; disposal of the contents of the portable tank is described in Section 5.2.

Concentrations of total metals in the concrete sample were less than the TTLCs so the concrete was also nonhazardous. PG&E used the concrete from the Transfer Sump as fill material on site at the Topock Compressor Station, as described in Section 7.1.

Concentrations of all parameters in the soil sample were less than the background standards so the subsoil is not contaminated. As described in Section 7.1, the excavation was backfilled.

Referring to the criteria stated in Step 4.6 of Section 11.0 of the Closure Plan, concentrations in the soil sample were less than the background standards, the concrete was not hazardous, and the visual inspection revealed no evidence of cracks or leakage. Therefore, the Transfer Sump is considered clean closed.

MITTELHAUSER corporation

PG&E — Closure Certification Report
Topock Compressor Station — March 1990
Phases 1 & 2, HWMF Closure — 104207.WK1

TABLE 7-1
TRANSFER SUMP – ANALYSIS RESULTS

Sample ID	Location	Depth	Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se	Elec Cond	F	Hex Cr	Oil & Gr	pH	TDS
EPA METHODS			6010	6010	6010	6010	6010	6010	6010	7421	6010	6010	6010	7841	6010	6010	7060	7470	7740		340.2	7196		9045	
WATER																									
DETECTION LIMITS			0.2	0.1	0.005	0.005	0.05	0.05	0.02	0.05	0.1	0.04	0.05	0.1	0.2	0.05	0.005	0.001	0.01		0.1	0.01	5		
STLC, mg/l			15	100	0.75	1.0	560	80	25	5.0	350	20	5	7.0	24	250	5.0	0.2	1.0		180	5			
1042-52-04	TS – 1	—	ND	3.3	ND	0.77	3.7	ND	0.59	2.65	0.3	0.11	ND	ND	ND	1.4	0.035	0.006	ND	NA	5.2	ND	110	7.99	1090
1042-52-11	PORT TANK		ND	1.1	ND	0.055	4.6	ND	1.2	0.5	11	0.05	ND	ND	ND	2.8	ND	0.001	ND	NA	8.1	ND	325	6.9	3548
CONCRETE																									
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	0.3	0.002	0.5		1.0	1.0	10.0		
TTLC, mg/kg			500	10000	75	100	2500	8000	2500	1000	3500	2000	500	700	2400	5000	500	20	100		18000	500			
1042-52-09	TS – 2	—	ND	96	ND	ND	30	5	9	9	ND	10	ND	ND	18	44	8.2	0.179	ND	NA	340	ND	NA	12.27	NA
SOIL																									
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	0.3	0.002	0.5		1.0	1.0	10.0		
BACKGROUND STANDARDS			7.2	373	1	0.6	43	19	20	16	1.7	53	1	5	50	135	4.4	0.123	0.5		914				
1042-52-10	TS – 3	.5'	ND	100	1	ND	20	11	8	4	ND	16	ND	ND	23	54	2.1	ND	ND	87	400	ND	NA	9.05	NA

7.5 DEVIATIONS FROM THE CLOSURE PLAN

There was a slight deviation from the Closure Plan in that the water in the Transfer Sump and hydroblast water from the Transfer Sump were not disposed of as hazardous wastes. The water and small amount of sludge in the Transfer Sump were pumped into the portable tank along with water and sludge from several other closure activities. As described in Section 5.2, water in the portable tank was analyzed and found to be nonhazardous, so a portion was transferred to the Evaporation Ponds and the rest was disposed of at Gibson Oil and Refinery Corporation in Bakersfield.

Rather than chiseling the concrete sample by hand from the Transfer Sump, it was selected from the pile of broken pieces of concrete left by the hydraulic hammer. This deviation is not significant since the samples still included the inner surface of the Transfer Sump.

The soil sample from beneath the Transfer Sump was collected from the excavation directly below the center of the sump after it was removed. This sample location is probably better than the one specified in the Closure Plan. The Closure Plan describes digging a trench along one side of the sump and taking the sample 1 foot beneath the lower edge of the Transfer Sump.

Finally, there was a minor deviation from page 3-2 of Appendix B, the Sampling and Analysis Plan. Table 3-1 on that page specifies collection of soil samples from the Transfer Sump by hand driving one brass tube and one fiberglass tube. Soil under the Transfer Sump was slightly consolidated and very rocky, making it impossible to hand drive a sample tube. Therefore, these samples were collected by hand with a trowel and placed in Zip-lock bags.

SECTION 8.0

STEP 5: PIPING

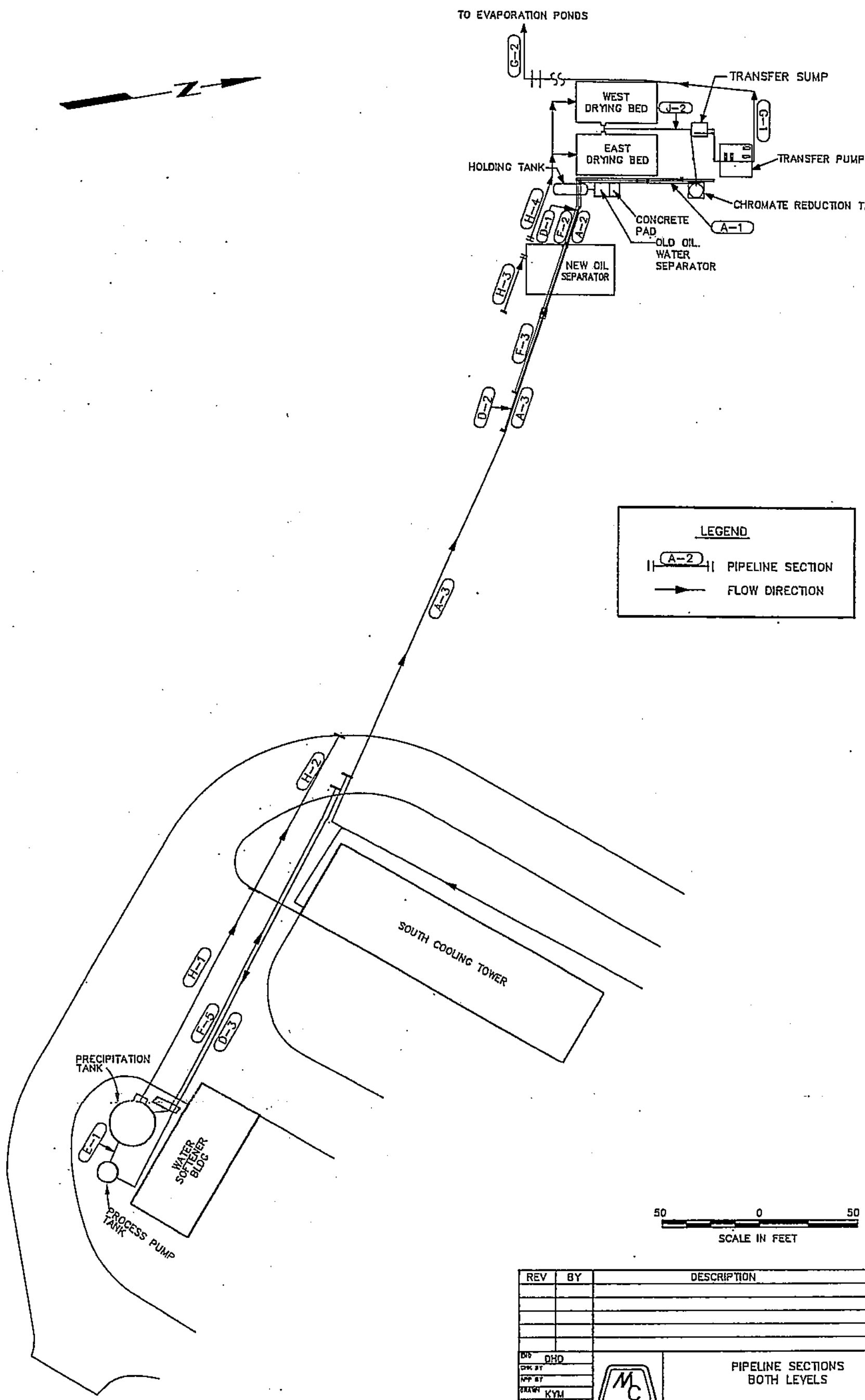
8.0 STEP 5: PIPING

This section summarizes procedures to close piping. Figure 9 of the Closure Plan designated by letter each pipeline section between the hazardous waste management facilities. The same letter designations are utilized in this chapter. Most of the letter sections were further divided during closure into shorter sections for testing. Pipeline sections on the upper and lower levels of the Topock Compressor Station are shown in Figure 8-1. A detail of the pipeline sections in the lower level is provided in Figure 8-2. Similarly, pipeline sections near the Precipitation and Process Pump Tanks are detailed in Figure 8-3. Pipeline sections near the Evaporation Ponds are shown in Figure 8-4.

Since the interiors of most of the pipelines had a visible green sludge coating, PG&E chose to remove most of the pipelines and dispose of them as a hazardous waste. However, portions of Sections D-3, F-5 and G-1 and all of Sections A-3, G-2 and G-3 were not removed. Approximately 20 feet of Sections D-3 and F-5 were under a new bermed concrete pad near the south cooling tower and could not be pulled out. These sections were capped and left in place. Similarly, approximately 10 feet of G-1 were encased in concrete near the west fence of the compressor station where it crossed the new pipeline to the new evaporation ponds. This section also could not be pulled out so it was left in place. Sections A-3, G-2 and G-3 have been continuously flushed since October 1985 when cooling water treatment with chromate ceased. Section A-3 is still in use, transferring wastewater from the cooling towers to the new wastewater treatment system. Sections G-2 and G-3 run from just inside the fenced area of the compressor station, across Bat Cave Wash on a bridge and up a steep slope to the Evaporation Ponds. It was decided to leave Sections G-2 and G-3 in place because of their lengths, the continuous flushing and their remote location.

The connections shown in the piping diagram in Figure 9 of the Closure Plan were found during closure to be correct. However, some of the pipelines were made of different materials than those listed in Table 4 of the Closure Plan. Pipeline sections A, B, C, D and F were 3-inch PVC; the buried portions of section G were 3-inch polyethylene and the portion that was suspended from a bridge over Bat Cave Wash was aluminum; most of section H was 6-inch vitrified clay. Figure 9 was correct in that the lower 60 feet of section H was cast iron and section E was steel.

When closure began, portions of some pipeline sections had already been removed. Evidently, several feet of pipeline



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CHK BY
APP BY
DRAWN KYM
DATE 2/9/90
SCALE AS SHOWN
CAD NO 10420019
PRJ NO 19042-45

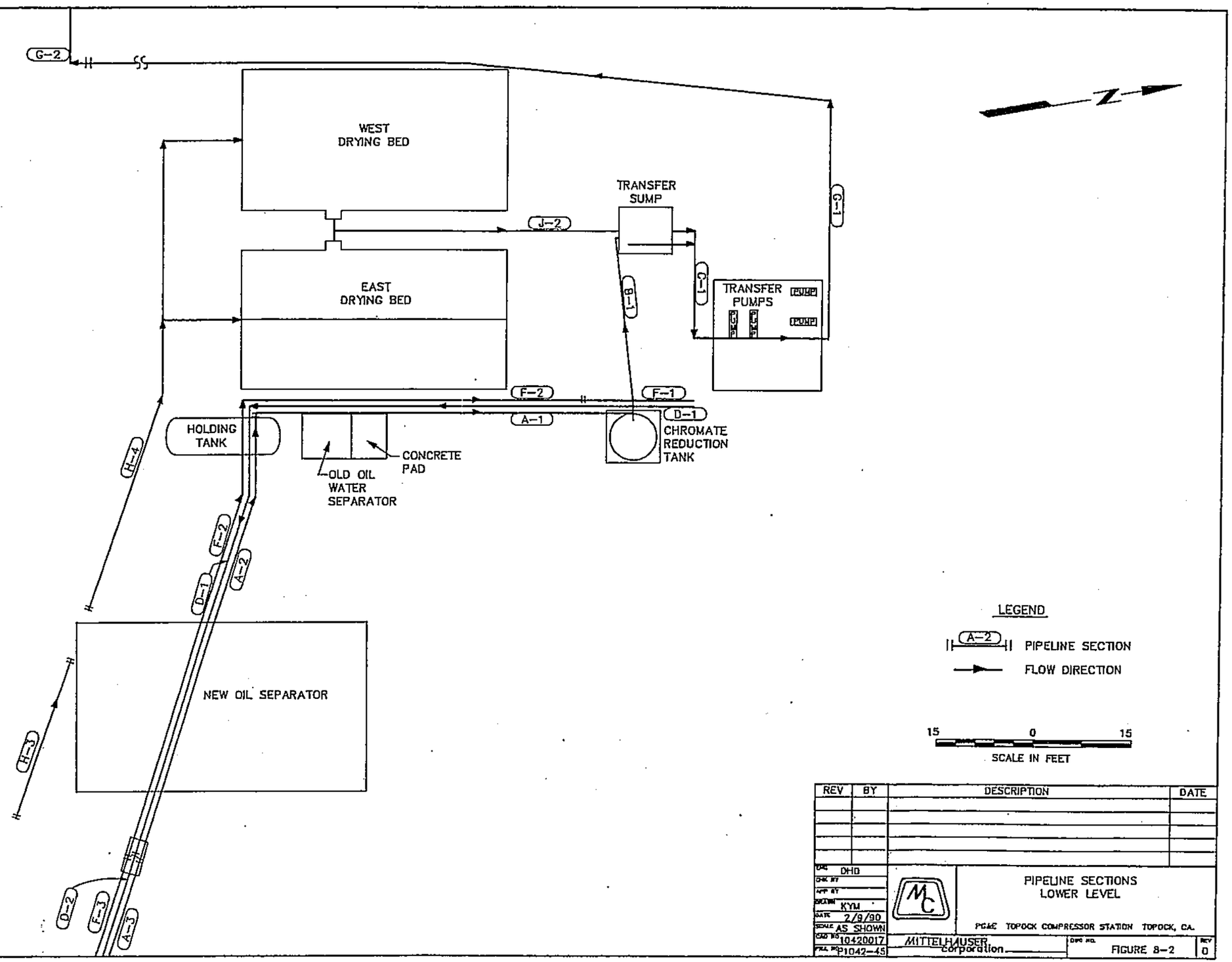
MITTELHAUSER corporation

PIPELINE SECTIONS
BOTH LEVELS

PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.

DWG NO. FIGURE 8-1

REV 0



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APP BY
DRAWN KYM
DATE 2/9/90
SCALE AS SHOWN
CAD NO 10420017
FILE NO P1042-45

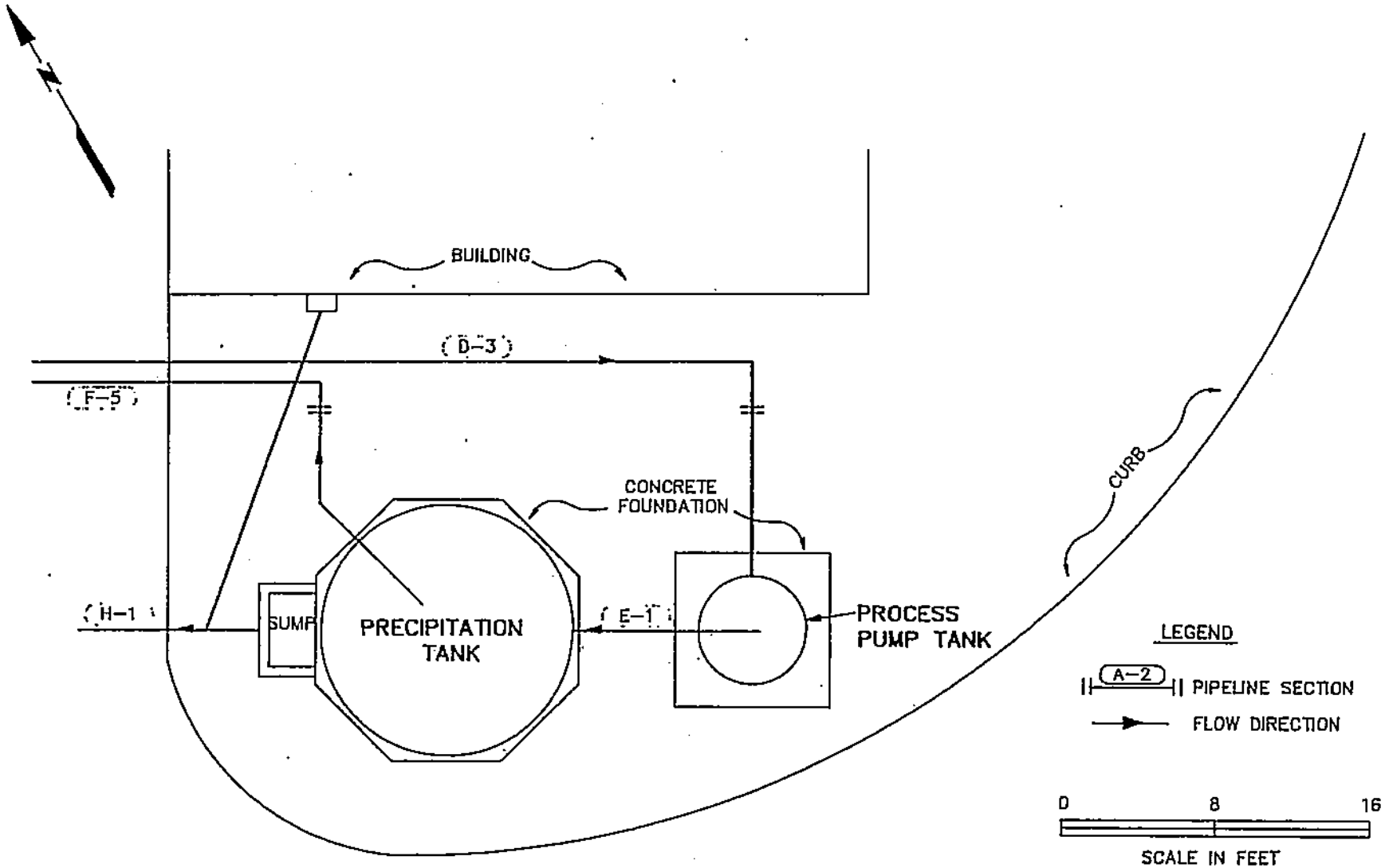
MITTELHAUSER corporation

PIPELINE SECTIONS
LOWER LEVEL

PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.

DWG NO. FIGURE 8-2

REV 0



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APP BY	
DRAWN	KYM
DATE	2/8/90
SCALE	AS SHOWN
CAD NO	10420013
FILE NO	P1042-45

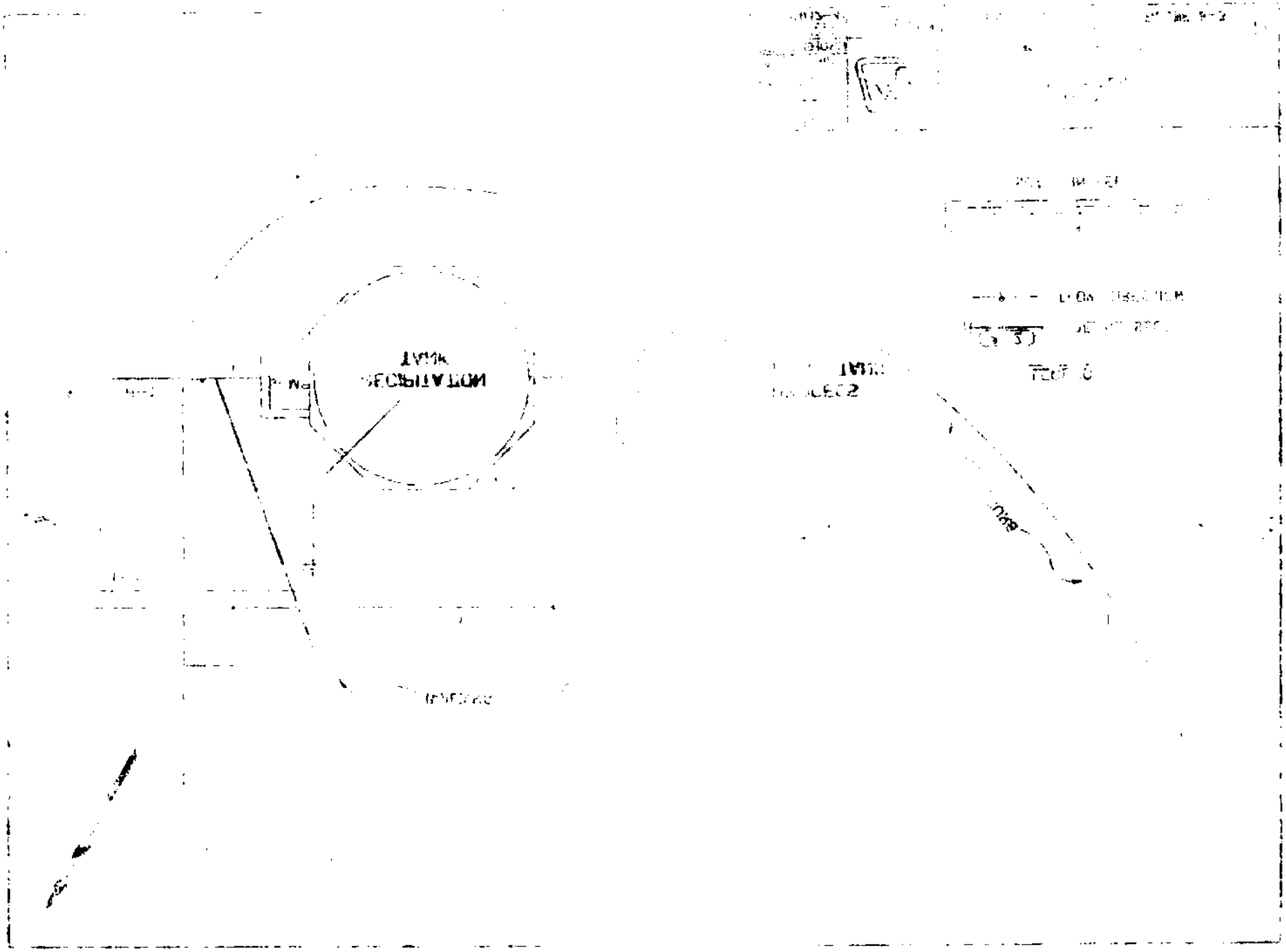
MITTELHAUSER corporation

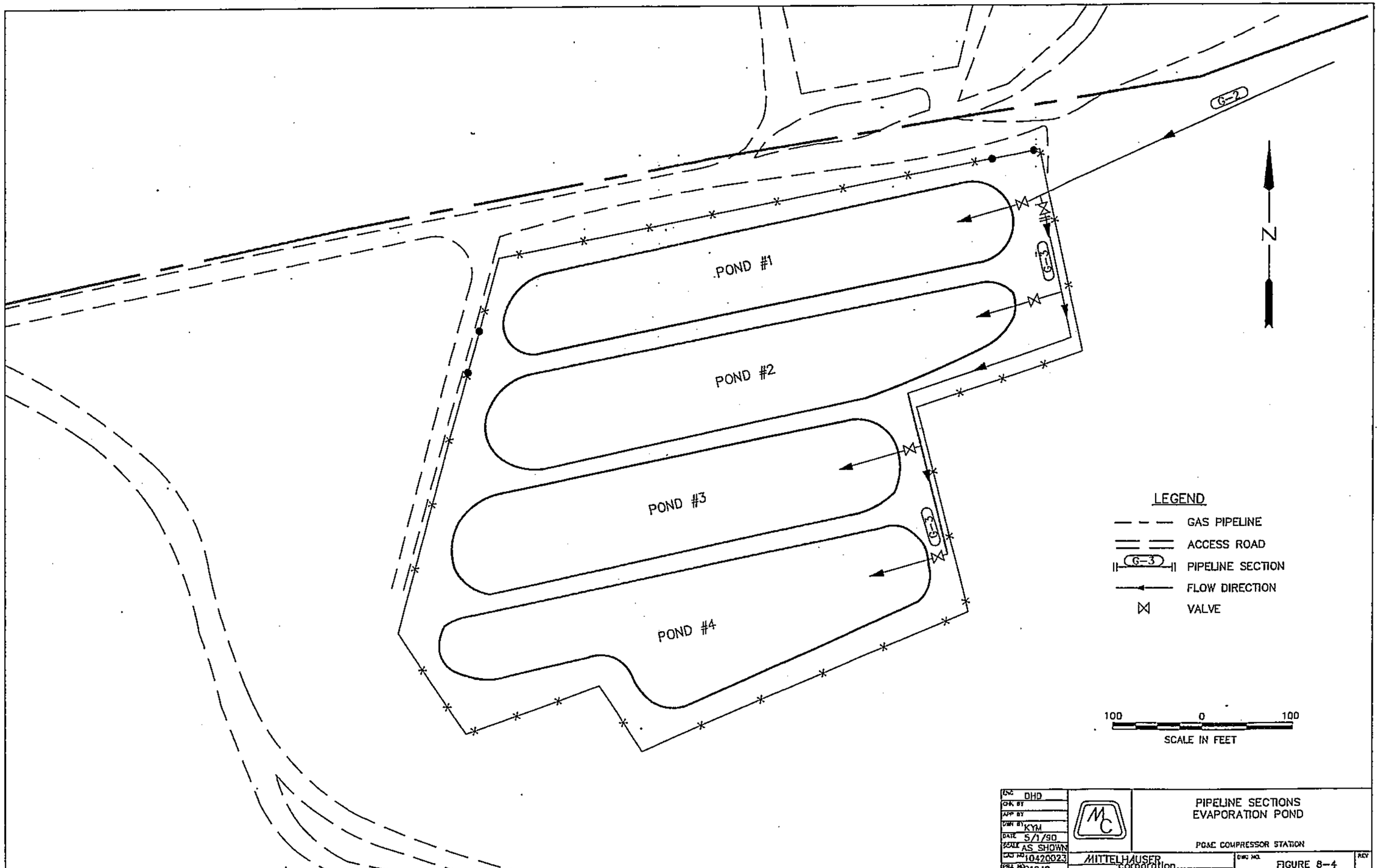
PIPELINE SECTIONS
UPPER LEVEL

PG&E TOPOCK COMPRESSOR STATION

DWG NO. FIGURE 8-3

REV 0




POND #1
POND #2
POND #3
POND #4
G-2
G-3
G-3
N
LEGEND
GAS PIPELINE
ACCESS ROAD
G-3
PIPELINE SECTION
FLOW DIRECTION
VALVE
100
0
100
SCALE IN FEET
DHD
KYM
5/1/90
AS SHOWN
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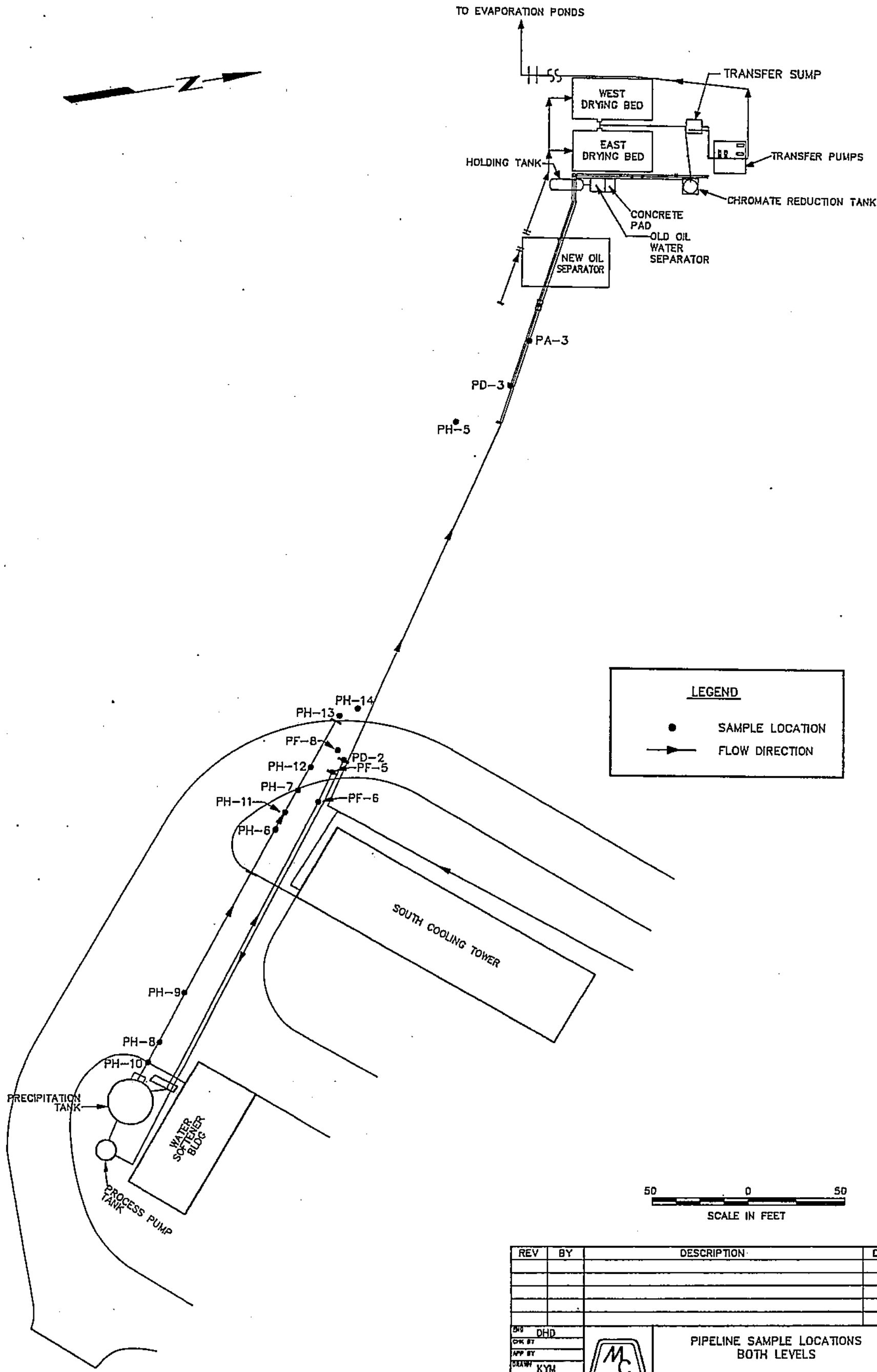
P1042
MITTELHAUSER corporation
PIPELINE SECTIONS
EVAPORATION POND
PG&E COMPRESSOR STATION
FIGURE 8-4



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CAD NO 10420022
FILE NO P1042-45

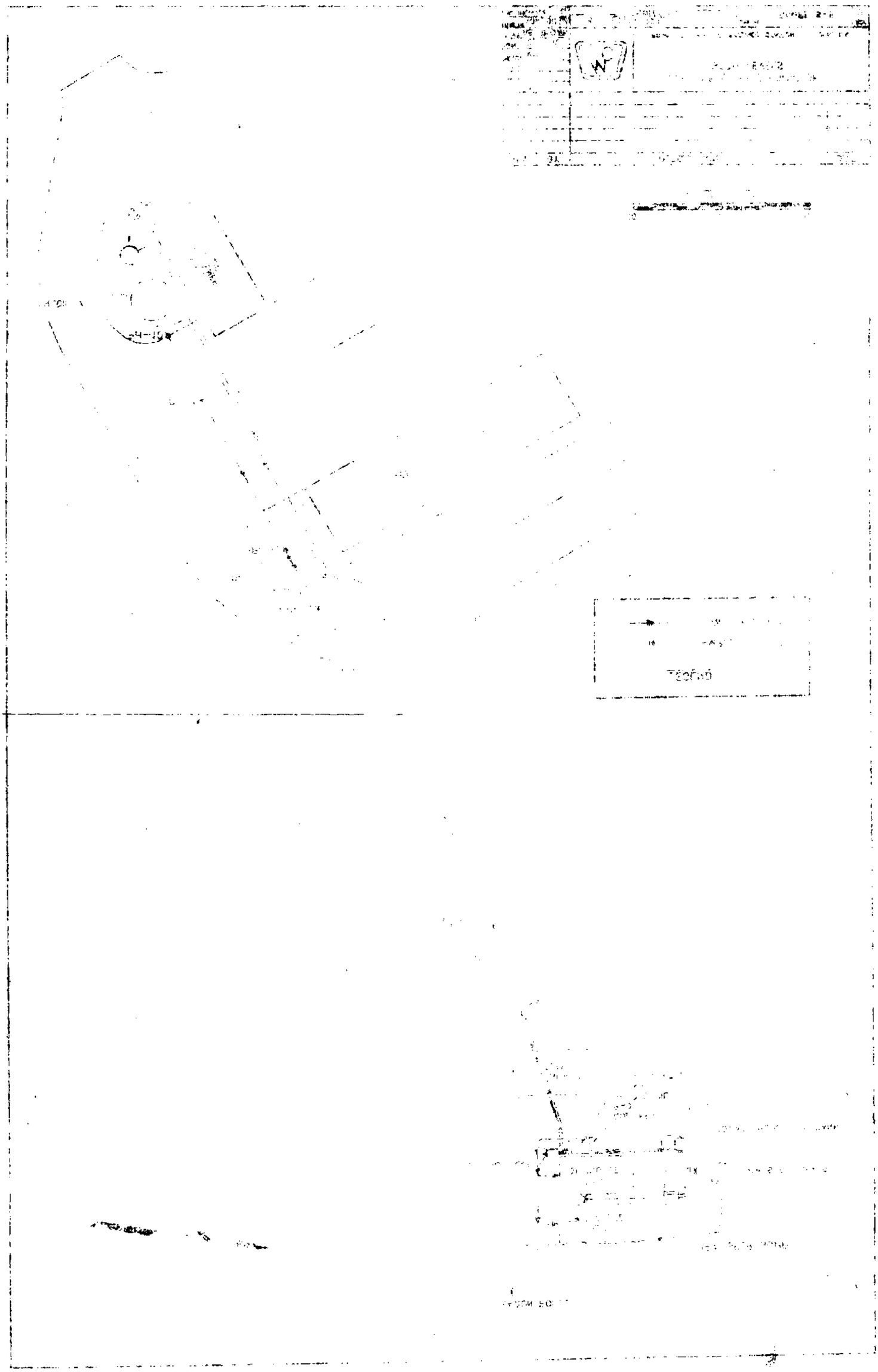
PIPELINE SAMPLE LOCATIONS
BOTH LEVELS

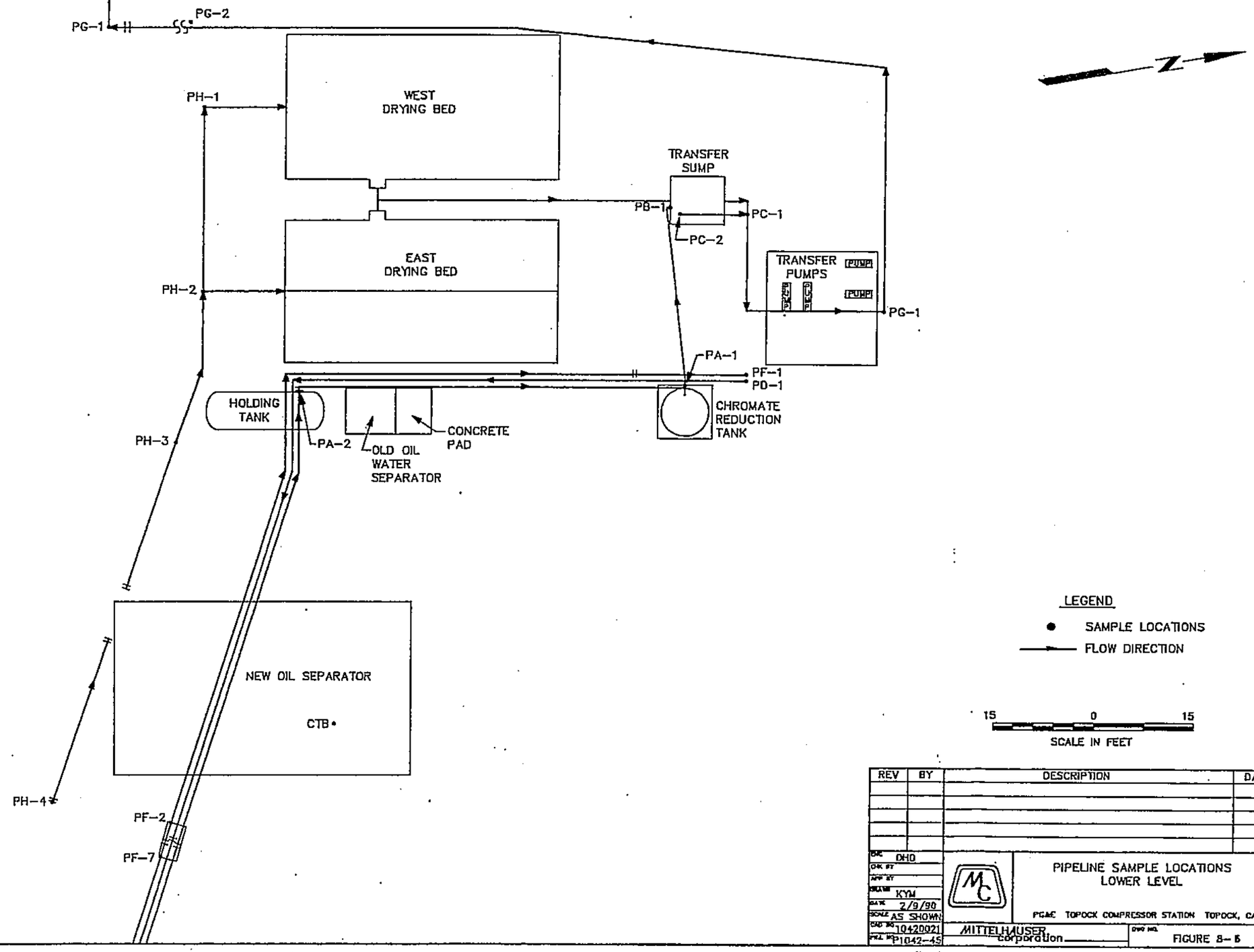
PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.

MITTELHAUSER corporation

DWG NO. FIGURE 8-5

REV 0





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CAD NO. 10420021
FILE NO. P1042-45

PIPELINE SAMPLE LOCATIONS
LOWER LEVEL

PG&E TOPOCK COMPRESSOR STATION TOPOCK, CA.

MITTELHAUSER Corporation

DWG NO. FIGURE 8-5

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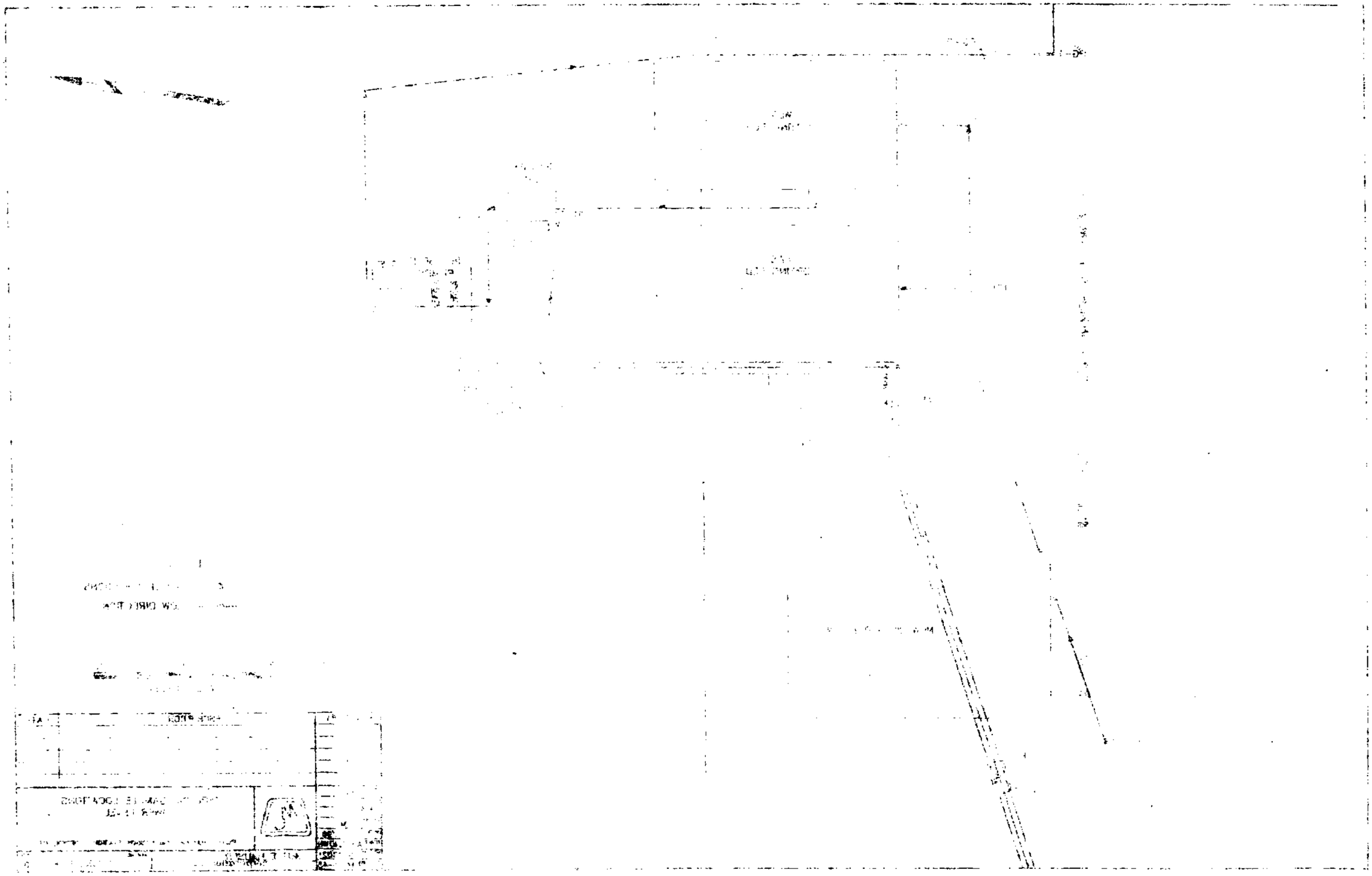

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PG&E — Closure Certification Report
Topock Compressor Station — March 1990
Phases 1 & 2, HWMF Closure — 104208.WK1

TABLE 8-2
PIPING – ANALYSIS RESULTS

Sample ID	Location	Depth	Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se	Elec Cond	F	Hex Cr	Oil & Gr	pH	TDS
												SOIL													
DETECTION LIMITS			0.3	1.0	1.0	0.5	3.0	3.0	3.0	1.0	1.0	3.0	1.0	5.0	1.0	3.0	.3	0.002	0.5		1.0	1.0	10.0		
BACKGROUND STANDARDS			7.2	373	1	0.6	43	19	20	16	1.7	53	1	5	50	135	4.4	0.123	0.5		914				
1042-51-10	PA-3	1'	ND	168	ND	ND	45	ND	7	14.8	ND	14	ND	ND	24	87	2.3	0.058	ND	244	583	ND	NA	8.2	NA
1042-51-10 DUP-1	PA-3	1'	ND	169	ND	ND	49	ND	8	12.4	NA	12	ND	ND	25	91	2.6	0.036	ND	NA	NA	NA	NA	NA	NA
1042-51-10 SPIKE	PA-3	1'	51%	86%	83%	79%	79%	81%	79%	89%	83%	80%	11%	68%	80%	79%	94%	125%	53%	NA	NA	NA	NA	NA	NA
1042-51-03	PC-1	1'	ND	123	ND	ND	10	6	10	9.4	ND	16	ND	ND	10	26	2	0.032	ND	120	310	ND	NA	8.59	NA
1042-51-03 SPIKE	PC-1	1'	86%	89%	90%	86%	87%	89%	89%	88%	88%	90%	86%	99%	86%	84%	102%	95%	66%	NA	NA	NA	NA	NA	NA
1042-43-11	PF-6	1'	ND	80	ND	ND	22	ND	3	28.5	ND	8	ND	ND	8	51	1.7	ND	ND	265	355	ND	NA	8.2	NA
1042-43-11 DUP-1	PF-6	1'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	263	334	ND	NA	8.2	NA
1042-43-11 SPIKE	PF-6	1'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96%	103%	NA	NA	NA
1042-43-12 DUP-2	PF-6	1'	ND	47	0.12	0.11	26	1.8	6.7	16	ND	5.4	ND	ND	7.3	26	2.0	ND	ND	980	380	ND	ND	8.69	ND
1042-51-09	PF-8	1'	ND	92	ND	ND	12	ND	7	9.0	6	7	ND	ND	ND	27	1.9	0.007	ND	98	519	ND	NA	8.5	NA
1042-51-06	PG-2	—	ND	152	ND	ND	24.7	ND	3.3	10.6	ND	9.6	4.4	ND	ND	92.8	2.18	0.026	ND	430	890	ND	NA	9.00	NA
1042-51-06 DUP-1	PG-2	—	ND	219	ND	ND	26	ND	9	4.1	ND	8	ND	ND	7	45	3.0	ND	ND	383	686	ND	NA	8.8	NA
1042-43-03	PH-3	3'	ND	199	ND	ND	25	7	9	4	ND	16	ND	ND	23	37	2.1	0.032	ND	320	520	2	NA	9.96	NA
1042-43-04	PH-4	3'	5.8	175	ND	ND	35	6	8	9	ND	17	ND	ND	23	53	2.1	0.006	ND	270	480	ND	NA	9.14	NA
1042-43-05	PH-5	6'	ND	216	ND	ND	12	7	5	6	ND	11	ND	ND	13	29	2.2	0.150	ND	160	570	ND	NA	8.42	NA
1042-43-05 DUP-1	PH-5	6'	ND	201	ND	ND	11	4	5	5	15	9	ND	ND	8	29	2.7	0.172	ND	NA	NA	NA	NA	NA	NA
1042-43-14	PH-6	1.5'	ND	66	ND	ND	45	9	13	32.2	ND	32	ND	ND	29	58	1.7	0.045	ND	412	506	ND	NA	10.3	NA
1042-43-15	PH-7	5'	ND	149	ND	ND	52	7	10	9.6	ND	25	ND	ND	23	118	1.7	0.034	ND	380	640	ND	NA	9.6	NA
1042-43-16 DUP-2	PH-7	5'	ND	79	0.2	0.19	27	3.3	11	2.2	ND	12	ND	ND	14	34	1.4	0.02	ND	810	650	ND	NA	10.26	ND
1042-43-18	PH-8	3'	ND	83	1	ND	37	6	16	6.1	ND	25	ND	ND	42	41	2.1	ND	ND	449	534	ND	NA	10.2	NA
1042-43-19	PH-9	3'	ND	56	ND	ND	34	ND	15	6.4	ND	24	ND	ND	40	61	1.7	0.011	ND	368	851	ND	NA	9.7	NA
1042-43-20	PH-10	2'	ND	113	1.5	ND	26	ND	26	20	ND	18	ND	ND	25	296	1.4	0.075	0.6	418	516	ND	NA	10.2	NA
1042-43-21	PH-11	4'	ND	111	1	ND	26	5	12	8.0	ND	18	ND	ND	33	47	1.7	ND	ND	225	617	ND	NA	8.6	NA
1042-43-22	PH-12	4'	ND	90	1	ND	28	4	12	8.0	ND	19	ND	ND	35	44	2.2	ND	ND	303	629	ND	NA	8.9	NA
1042-43-23	PH-13	6'	ND	216	ND	ND	37	ND	8	12.5	ND	9	ND	ND	24	102	2.5	0.009	ND	328	670	ND	NA	8.5	NA
1042-43-01	PH1	—	ND	170	ND	ND	23	5.1	ND	10	ND	8.5	ND	ND	13	30	3.19	0.061	ND	NA	498	ND	NA	8.57	NA
1042-43-01 DUP-1	PH1	—	ND	180	ND	ND	22	5.1	ND	20	ND	6.8	ND	ND	15	33	2.48	0.043	ND	NA	502	ND	NA	8.40	NA
1042-43-01 SPIKE	PH1	—	138%	87.5%	90%	128%	94%	93%	90%	98%	75%	87%	13%	3.5%	93%	89%	104%	83%	45%	NA	95%	97%	NA	NA	NA
1042-43-02	PH2	—	ND	150	ND	0.6	510	6.0	8.7	38	ND	6.7	ND	ND	13	210	2.42	0.076	ND	NA	500	1.9	NA	8.45	NA

MITTELHAUSER corporation

PG&E — Closure Certification Report

Topock Compressor Station — March 1990

Phases 1 & 2, HWMF Closure — 104208.WK1

TABLE 8-2

PIPING – ANALYSIS RESULTS

Sample ID	Location	Depth	Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se	Elec Cond	F	Hex Cr	Oil & Gr	pH	TDS
EPA METHODS			6010	6010	6010	6010	6010	6010	6010	7421	6010	6010	6010	7841	6010	6010	7060	7470	7740		340.2	7196		9045	
WATER																									
DETECTION LIMITS			0.2	0.1	0.005	0.005	0.05	0.05	0.02	0.05	0.1	0.04	0.05	0.1	0.2	0.05	0.005	0.001	0.01		0.1	0.01	5		
STLC, mg/l			15	100	0.75	1.0	560	80	25	5.0	350	20	5	7.0	24	250	5.0	0.2	1.0		180	5			
1042-51-07	PA - 1	—	ND	0.3	ND	ND	0.14	ND	0.10	ND	4.6	ND	0.06	ND	ND	0.38	0.043	ND	ND	NA	17	ND	230	7.14	5370
1042-51-08	PA - 2	—	ND	0.2	ND	0.015	ND	ND	ND	ND	0.1	ND	ND	ND	ND	0.52	0.014	ND	ND	NA	5.1	ND	230	7.00	1060
1042-51-05	PB - 1	—	ND	0.15	ND	0.047	0.05	ND	0.11	ND	ND	ND	ND	ND	ND	0.24	0.017	ND	ND	NA	8.8	ND	ND	7.54	1000
1042-51-05 DUP-1	PB - 1	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.3	ND	NA	7.56	9.70
1042-51-05 SPIKE	PB - 1	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	104%	01%	NA	NA	NA
1042-51-04	PC - 2	—	ND	0.15	ND	0.007	ND	ND	0.12	ND	0.4	ND	ND	ND	ND	0.33	0.013	ND	ND	NA	4.6	ND	ND	7.28	1100
1042-43-06	PD - 1	—	ND	ND	ND	ND	0.07	ND	0.07	ND	0.1	0.06	ND	ND	ND	0.11	0.011	ND	ND	NA	4.7	ND	ND	8.26	1270
1042-43-06 DUP-1	PD - 1	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.8	ND	NA	NA	1200
1042-43-06 SPIKE	PD - 1	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	104%	10%	NA	NA	NA
1042-43-09	PD - 2	—	ND	0.2	ND	ND	0.35	ND	0.05	ND	0.2	ND	ND	ND	ND	0.61	0.019	ND	ND	NA	5.0	ND	6	6.82	1450
1042-43-17	PD - 3	—	ND	0.2	ND	ND	0.11	ND	0.06	ND	0.1	ND	ND	0.1	ND	0.37	ND	ND	ND	NA	3.8	ND	ND	7.1	1064
1042-43-07	PF - 1	—	ND	0.35	ND	ND	0.4	ND	0.07	0.08	1.7	ND	ND	ND	ND	0.12	0.019	ND	ND	NA	4.7	ND	7	7.36	1050
1042-43-08	PF - 2	—	ND	0.3	ND	0.018	0.61	ND	0.04	ND	4.1	ND	ND	ND	ND	3.9	0.011	ND	ND	NA	4.4	ND	ND	7.25	1300
1042-43-08 DUP-1	PF - 2	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5	ND	NA	NA	1270
1042-43-08 SPIKE	PF - 2	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100%	06%	NA	NA	NA
1042-43-10	PF - 5	—	ND	0.2	ND	0.018	0.47	ND	ND	ND	1.7	ND	ND	ND	ND	0.74	0.013	ND	ND	NA	6.1	ND	330	7.62	1070
1042-43-10 DUP-1	PF - 5	—	ND	0.3	ND	0.015	0.46	ND	ND	ND	1.7	ND	ND	ND	ND	0.58	0.013	ND	ND	NA	NA	NA	NA	NA	NA
1042-43-10 SPIKE	PF - 5	—	102%	104%	102%	94%	00%	99%	00%	00%	02%	99%	0%	93%	96%	12%	96%	113%	880%	NA	NA	NA	NA	NA	NA
1042-43-13	PF - 7	—	ND	0.2	ND	ND	ND	ND	0.07	ND	0.2	ND	ND	ND	ND	0.34	ND	ND	ND	NA	4.0	ND	ND	7.8	1014
1042-43-13 DUP-1	PF - 7	—	ND	0.2	ND	ND	ND	ND	0.02	ND	0.2	ND	ND	ND	ND	0.25	ND	ND	ND	NA	4.0	ND	NA	NA	1018
1042-43-13 SPIKE	PF - 7	—	96%	100%	101%	91%	01%	00%	00%	99%	02%	99%	0%	89%	97%	93%	108%	130%	92%	NA	101%	94%	NA	NA	NA
1042-51-02	PG - 1	—	ND	0.21	ND	0.014	0.17	ND	0.43	ND	1.6	ND	ND	ND	ND	0.53	0.027	ND	ND	NA	5.7	ND	34	7.35	1300
1042-43-24	PH - 14	—	ND	0.2	ND	ND	0.05	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND	ND	ND	NA	4.1	ND	ND	8.9	1242
1042-43-25 DUP-2	PH - 14	—	ND	0.16	ND	ND	0.05	ND	ND	ND	ND	0.04	ND	ND	ND	0.05	0.015	ND	ND	NA	4.8	ND	ND	8.76	1100
1042-51-01	Cooling T	—	ND	0.44	ND	ND	0.12	ND	0.16	ND	0.3	ND	ND	ND	ND	0.07	0.080	ND	ND	NA	27	0.05	ND	8.44	8100
1042-52-11	Port Tank	—	ND	1.1	ND	0.055	4.6	ND	1.2	0.5	11	0.05	ND	ND	ND	2.8	ND	0.001	ND	NA	8.1	ND	325	6.9	3548

[illegible]

sections D, F and H were removed a few years ago when the entire area was excavated during an extensive construction project to repair underlying high pressure gas pipelines. Use of these pipelines had ceased when the cooling tower water treatment process was converted from chromate to phosphate in October 1985. In addition, a few feet of pipeline section H were removed just prior to closure when the new oil water separator was constructed. As described in Section 8.3.2, a few soil samples were taken in areas where the pipelines had been removed prior to closure to determine if the soil was contaminated.

Pipeline Section H was not pressure tested because it was found to be a vitrified clay pipe. The pipeline had concrete encased bell joints and served as a gravity line for treated chromium sludge. At the start of closure, this line was thought to be a cast iron pipe because the lower 60 feet, which included two gate valves and the outlets to the sludge drying beds, was cast iron. In lieu of pressure testing, pipeline section H was removed by hand and each joint was inspected for visible evidence of cracks or leakage.

A small volume of contaminated soil was removed beneath each cracked joint and from areas in which white or green sludge was visible. The white and green sludge were presumed to be calcium carbonate and chromium sludge, respectively. Prior to use in the chromium treatment system, Pipeline section H had been part of a water softener system. White calcium carbonate precipitate flowed from the Precipitation Tank to the Sludge Drying Beds in this pipe. After removal of the visibly contaminated soil, a soil sample was taken. Because it was not pressure tested, at least one soil sample was collected from each section of Pipeline H, even if there was no visible evidence of leakage. In addition, Sample 1042-43-05 was taken at location PH-5 where this pipeline had been removed a few years previously.

All contaminated soil associated with the pipelines and the pipelines that were removed were placed in roll-off bins. The contents of the roll-off bins were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

8.1 PRESSURE TEST PROCEDURES

The following test procedures were followed for each pipeline section shown in Figures 8-1, 8-2, 8-3 and 8-4. First, both ends of the section were exposed and the pipeline was cut. The ends were then sealed with expandable plugs or PVC fittings were glued on. On the lower end of the pipeline, a water hose, pressure gauge, graduated cylinder and pressurized air tank were

attached. On the upper end, a valve for releasing air was fitted. The pipeline was then filled with water from the low end and air was allowed to escape through the valve on the high end. After the pipeline section was filled with water, the filling hose was disconnected.

This procedure was modified for pipeline sections G-2 and G-2/G-3. Pipeline G was 3-inch polyethylene and was the discharge line that ran from the treatment facilities, across Bat Cave Wash on a bridge and up to the evaporation ponds. The upper end was approximately 70 feet higher in elevation than the lower end and it was approximately 1,200 feet long. When these sections were tested in March 1990, it was decided to test with air rather than water. When the lower section of the same pipeline, section G-1, was tested in November 1989, some difficulty was experienced retaining the expandable plug in the end of the pipe because the polyethylene was slippery. For this reason and because of the elevation difference and length, it was feared that a large volume of test water would be spilled if water were used and the plug came out of the pipe. To minimize the chances of false positive results due to heating of the test air, the tests were started at 6:00 A.M. and completed by 7:30 A.M., before sunlight reached the portion of pipe suspended from the structure in Bat Cave Wash.

The Closure Plan requires monitoring applied pressure for two 15-minute test periods. If there was no or minimal pressure drop, the pipeline section was considered not leaking. In addition to monitoring pressure, the pipeline tests measured the volume of water that leaked out of the pipeline section. The graduated cylinder and pressurized air tank were connected so that air pressure, which was monitored with a pressure gauge, would force water in the graduated cylinder into the pipeline if there was a leak. In this way, the decrease in volume of water in the graduated cylinder would be equal to the volume of water that leaked out of the pipeline.

The pressure loss for the two 15-minute test periods and the volume loss for each pipeline section are presented in the next section. The cylinder was graduated in volume units of 10^{-3} gallons so the test results are reported in these units.

A few sections (A-1, D-3, F-5 and G-1) passed the pressure test but the volume loss could not be measured. Each pipeline section was filled from the lower end until water came out of a fitting at the upper end. It was then presumed that the pipeline was full with water. With these sections when the graduated cylinder was pressurized with air, water in the graduated cylinder would repeatedly empty into the pipeline.

However, after a few cycles of refilling the graduated cylinder and running the 15 minute test, the pipeline section would pass the pressure test. Evidently, solids in the pipeline were trapping air, which meant that more water could enter the pipeline when pressure was applied. After the trapped air was compressed to the test pressure, a valid test could still be conducted. If there had been leakage, the pressure would have decreased regardless of whether the pipeline was filled with water only or water and air.

Sections G-2 and G-3 were both tested from the lower end of G-2. As shown in Figure 8-4, there were five valves on these sections near the ponds. For the initial test, all valves were closed, so presumably section G-2 was being pressurized. To test this presumption and to test section G-3, the valve leading to Ponds 2, 3 and 4 was opened and section G-2/G-3 was pressurized again from the lower end. The test results are shown in Table 8-1.

8.2 PRESSURE TEST RESULTS

The pipe pressure test results are presented in Table 8-1. The pressure at the start and end of two 15-minute test periods are listed in the second and third columns. The volume loss in units of 10^{-3} gallons (approximately 4 ml) is listed in the fourth column.

In the last column the results of each test are listed. Although the pressure and volume loss for pipeline section C-1 was minimal, some seepage was seen at a gate valve during the pressure tests. To determine if soil had been contaminated by the seepage, soil sample 1042-51-03 was taken beneath this gate valve at location PC-1. The location of this sample is shown in Figure 8-6. Similarly, pipeline section F-5 passed the pressure test, but some seepage was seen at a coupling during the pressure test. Soil sample 1042-43-11 was taken beneath this coupling at location PF-6.

Two pipeline sections, F-2 and G-1, failed the initial pressure test. However, after refilling with water and carefully expelling trapped air, both sections passed both 15-minute pressure tests. One pipeline section, F-3, could not be made to retain pressure, so it failed the pressure test. The adjacent section, 10- to 15-foot F-4, was broken by the backhoe while digging a trench to determine if pipeline H was still buried nearby. Consequently, section F-4 could not be tested. A few inches of underlying soil and the pipelines were removed and disposed of as hazardous waste. After soil removal, soil sample 1042-51-10 was collected at location PA-3 to determine if

TABLE 8-1

PIPE TEST RESULTS

Pipeline Section	Test Pressure, psi Start	End	Volume Loss, 10^{-3} gal.	Remarks
A-1	21	21	-	Pass, unable to measure
	21	21	-	Pass volume loss
A-2	25	25	0	Pass
	25	25	0	Pass
B-1	15	15	4.5	Pass
	15	15	1.5	Pass
C-1	15	15	1.5	Pass, slight leak at
	15	15	1.5	Pass gate valve
D-1	27	27	4.5	Pass
	28	28	3	Pass
D-2	24	24	0	Pass
	24	24	0	Pass
D-3	18	18	-	Pass, unable to measure
	19	19		volume loss
F-1	26	26	0	Pass
	26	26	1.5	Pass
F-2	28	24		Fail, retest
	26	26	4.5	Pass
	26	25	4.5	Pass
F-3	24	0	-	Fail, pipe and underlying soil removed, see text
F-5	18	18	-	Pass, Unable to measure
	18	17.5	-	volume loss, slight seepage at coupling
G-1	18	14		Fail, retest
	27	25	-	Pass, unable to
	25	24	-	Pass, measure volume loss
G-2	28	28	-	Pass, air test
	28	28	-	Pass, air test
G-2/G-3	26	25	-	Pass, air test
	25	25	-	Pass, air test

leakage from pipeline sections A-3 or F-3 had contaminated the soil.

8.3 PIPELINES SAMPLES

8.3.1 Water Samples

After the pressure tests, water in the pipeline sections was sampled. The analytical results are presented in Table 8-2. Sample locations for the water samples are shown in Figures 8-5 and 8-6. This water was in contact with the inside of the pipeline for at least 30 minutes, but usually for 1 to 2 hours. The water from each of the pipe tests was transferred to the portable tank. Disposal of the contents of the portable tank is described in Section 5.2.

As discussed on pages 11-5 and 11-12 of the Closure Plan, two samples of wastewater were collected from pipeline sections that will continue to be used for non-hazardous wastewater. Water sample 1042-51-01 was collected from a sample valve at the inlet to the new wastewater treatment system. This water represents cooling tower blowdown that flowed through pipeline section A-3. The analytical results for this sample are presented in Table 8-2. Water sample 1042-52-01 was collected from the Chromate Reduction Tank before it was pumped out. This sample represents cooling tower blowdown that flowed through pipeline sections A-3, A-2 and A-1 before discharging to the Chromate Reduction Tank. Approximately 2 months prior to sampling, flow was diverted into the new wastewater treatment system at the junction of pipeline sections A-3 and A-2.

8.3.2 Soil Samples

Soil samples were also taken beneath several of the pipeline sections. Locations of these soil samples are shown in Figures 8-5 and 8-6. Analytical results for the soil samples are presented in Table 8-2.

The reasons that the soil samples were taken are presented in Table 8-3. Most samples were taken because there was visible evidence of leakage: wet or damp soil or soil that was visibly contaminated with green or white sludge. Green sludge was presumed to be chromium hydroxide sludge. The white sludge was probably calcium carbonate from the earlier water softening operation. Leakage of calcium carbonate is not itself a threat to human health or the environment, but the same pipelines that earlier conveyed water softening sludge later contained chromium sludge. An old leak, as evidenced by calcium carbonate deposits, could have more recently leaked chromium sludge, so a soil sample was collected.

TABLE 8-3

REASONS FOR TAKING SOIL SAMPLES
BENEATH PIPELINE SECTIONS

Sample Location	Sample No.	Pipeline Section	Reason for Sample
PA-3	1042-51-10	A-3 F-3	Operating pipeline, sampled below joint Section failed pressure test
PC-1	1042-51-03	C-1	Section passed pressure test, sampled beneath slight leak at gate valve
PF-6	1042-43-11	F-5	Section passed pressure test, sampled beneath slight leak at PVC slip joint
PF-6	1042-43-12	F-5	Duplicate of 1042-43-11
PF-8	1042-51-09	F-5	Sampled off the end of previous cut in the pipe, no visible evidence of leaks
PG-2	1042-51-06	G-1	No evidence of a leak, sampled white material around pipe, fizzes with HCl, probably $CaCO_3$ from water softening
PH-1	1042-43-01	H-4	Sampled 3" beneath gate valve after removing soil contaminated with green sludge
PH-2	1042-43-02	H-4	Sampled beneath gate valve, no visible evidence of leakage
PH-3	1042-43-03	H-4	Sampled beneath a joint in clay pipe, no visible evidence of leakage
PH-4	1042-43-04	H-3	Sampled off end of previous break in the pipe, no visible evidence of leaks
PH-5	1042-43-05	H-3	Sampled 65′ off end of previous break in the pipe, at probable location of old pipe
PH-6	1042-43-14	H-2	Sampled 1.5′ beneath clay pipe after removing soil contaminated with white sludge
PH-7	1042-43-15	H-2	Sampled 3" beneath clay pipe after removing soil where pipe was previously broken
PH-7	1042-43-16	H-2	Duplicate of 1042-43-15
PH-8	1042-43-18	H-1	Sampled 3" beneath clay pipe after removing soil contaminated with green sludge
PH-9	1042-43-19	H-1	Sampled 3" beneath clay pipe after removing soil contaminated with white sludge

TABLE 8-3 (Continued)

REASONS FOR TAKING SOIL SAMPLES
BENEATH PIPELINE SECTIONS

Sample Location	Sample No.	Pipeline Section	Reason for Sample
PH-10	1042-43-20	H-1	Sampled 6" beneath clay pipe after removing soil contaminated with green sludge
PH-11	1042-43-21	H-2	Sampled 6" beneath clay pipe after removing soil where pipe was previously broken
PH-12	1042-43-22	H-2	Sampled 3: beneath clay pipe after removing soil where pipe was previously broken
PH-13	1042-43-23	H-2	Sampled off end of previous break in the pipe, no visible evidence of leaks

Because it could not be pressure tested, at least one sample was taken from each section of the clay line (section H), even if there was no visible leakage. Finally, a sample was taken beneath a joint in section A-3 in lieu of pressure testing. This section was still in operation, conveying cooling tower blowdown to the new wastewater treatment system. A pressure test would have necessitated a complete shutdown of the cooling towers and treatment system.

The first round soil samples associated with the pipelines were taken in December 1988 and November 1989. After the pipelines were removed, but before the excavations were backfilled, plastic sheets were placed as markers in the bottoms of the excavations. In March 1990 contaminated soil was removed from the five areas that had metals concentrations greater than the background standards. Clean overburden was removed down to the plastic sheeting and placed to one side. A few backhoe scoops of contaminated soil were then removed and placed on the ground surface on plastic sheeting. A second round sample was then collected and the excavation was backfilled with the clean overburden.

8.4 CONCLUSIONS

As shown in Table 8-2, no metal concentration in the washwater samples exceeded the STLCs, so none of the samples was hazardous.

As discussed on pages 11-5 and 11-12 of the Closure Plan, if wastewater in portions of the piping system that will be used for non-hazardous wastewater has chromium concentrations less than 0.05 mg/l, the piping will be considered decontaminated. Sample 1042-51-01, collected from a sample valve at the inlet to the new wastewater treatment system, had a total chromium concentration of 0.12 mg/l and a hexavalent chromium concentration of 0.05 mg/l. Sample 1042-52-01 from the Chromate Reduction Tank had a total chromium concentration less than the detection limit of 0.05 mg/l and a hexavalent chromium concentration less than the detection limit of 0.01 mg/l. Both of these samples represent wastewater from the cooling towers that had flowed through pipelines that will continue to be used for nonhazardous waste. Although the total chromium concentration of 0.12 mg/l in sample 1042-51-01 was greater than the criterion concentration of 0.05 mg/l, the concentration of hexavalent chromium, which is the parameter of greater concern, was equal to 0.05 mg/l. In the other sample, which is essentially a duplicate, the concentration of both chromium species is less than the 0.05 mg/l criterion. PG&E concludes that these data demonstrate that the active pipelines have been sufficiently decontaminated.

Analytical results for the soil samples are also presented in Table 8-2. Five of these first round soil samples had metal concentrations greater than the background standards. Locations for three of these samples, PF-8, PH-6 and PH-10, are shown in Figure 8-5; locations PH-2 and PH-3 are shown in Figure 8-6.

First-round concentrations that were greater than the background standards are presented as the first of each pair of lines in Table 8-4. The second line of each pair in Table 8-4 is the analytical results for the second round of samples. It can be seen that in each location these analytical results indicate that all contaminated soil has been removed and the Piping has been "clean" closed.

8.5 DEVIATIONS FROM THE CLOSURE PLAN

Portions of three pipeline sections as identified in the Closure Plan were not pressure tested. Section A-3 was not tested because it is an operational line, conveying blowdown water from two cooling towers to the new wastewater treatment system. Testing would have required shutting down the cooling towers and cutting into the pipeline at two places. Instead, a soil sample (#1042-51-10) was collected beneath a joint in the pipeline. The analytical results indicated that the subsoil was not contaminated.

Section E was a 10-foot-piece of welded 4-inch-steel pipe, approximately 12 feet above grade, that ran from the Precipitation Tank to the Process Pump Tank. There was no visible evidence of leakage on the ground or on the pipe so it was decided that a pressure test was unnecessary.

Finally, Section H was found to be a vitrified clay pipe. The pipeline was a gravity line for treated chromium sludge and it had concrete encased bell joints. When the Closure Plan was written, it was thought to be cast iron because the lower exposed portion, which included two gate valves and the outlets to the Sludge Drying Beds, was cast iron. In lieu of pressure testing, pipeline section H was removed by hand and each joint was inspected for visible evidence of cracks or leakage. A soil sample was collected if the pipe was broken or if green or white sludge was found in the surrounding soil.

Somewhat different test pressures than those listed in Table 4 of the Closure Plan were used for the pressure tests. The general field criteria were 15 to 20 psi for level pipeline sections and 25 to 30 psi for sloping sections. The revised test pressures were adopted for two reasons: 1) the pipeline sections,

TABLE 8-4

TOTAL METAL CONCENTRATIONS EXCEEDING BACKGROUND STANDARDS

FIRST AND SECOND ROUND SAMPLING

Sample #	Location	Be	Cr	Cu	Pb	Mo	Zn	CrVI
Background Std.		1	43	20	16	1.7	135	1
1042-51-09	PF-8	-	-	-	-	6	-	-
1042-43-29	PF-8	-	-	-	-	0.82	-	-
1042-43-14	PH-6	-	45	-	32.2	-	-	-
1042-43-28	PH-6	-	10	-	2.3	-	-	-
1042-43-20	PH-10	1.5	-	26	-	-	296	-
1042-43-26	PH-10	0.26	-	5.1	-	-	12	-
1042-43-02	PH-2	-	510	-	38	-	210	1.9
1042-43-30	PH-2	-	8.0	-	2.9	-	16	< 1
1042-43-03	PH-3	-	-	-	-	-	-	2
1042-43-31	PH-3	-	-	-	-	-	-	< 1

as listed in Figure 9 and Table 4 of the Closure Plan, were divided into shorter test sections. Some of the test sections had greater operating pressures because they were at a lower elevation and some would have had lesser operating pressures because they were at the top of the hill; and 2) most of the pumped sections discharged to an open-ended pipe so the pressure would have been equal to approximately the difference in elevation head between the pump and the discharge end of the pipe. For example, Table 4 lists the operating pressure for section D as 60 psi. This pipeline conveyed water from pumps on the lower level to a free discharge in the Precipitation Tank, approximately 40 feet higher in elevation. The actual test pressure of 27-28 psi provided a sufficient safety margin over the actual operating pressure of approximately 17 psi.

Pipeline sections G-2 and G-2/G-3 were tested with air, rather than water. When the lower section of this pipeline, section G-1, was tested earlier, the expandable plug in the end of the pipe blew out because the polyethylene was slippery. For this reason, and because of the elevation difference and length, it was feared that a large volume of test water would be spilled if water were used for the test.

SECTION 9.0

STEP 6: EVAPORATION PONDS

9.0 STEP 6: EVAPORATION PONDS

Closure of the Evaporation Ponds will be described later in a separate report.

SECTION 10.0

STEP 7: CERTIFY CLOSURE

10.0 STEP 7: CERTIFY CLOSURE

Certification by PG&E and an independent professional engineer, registered in California, is provided in Section 2.0.

SECTION 11.0

STEP 8: NOTIFY REGULATORY AGENCIES OF CLOSURE

11.0 STEP 8: NOTIFY REGULATORY AGENCIES OF CLOSURE

Submittal of this Closure Certification Report constitutes notification of the regulatory agencies that the Hazardous Waste Management Facilities are closed and certified per the approved Closure Plan.

SECTION 12.0

CONCLUSIONS

12.0 CONCLUSIONS

PG&E completed the following tasks during Phases 1 and 2 of closure of the Hazardous Waste Management Facilities:

1. All hazardous waste management facilities in the compressor station area have been "clean" closed. These include the Sludge Drying Beds, Chromate Reduction Tank, Precipitation Tank, Process Pump Tank, Transfer Sump, Piping, and associated small sumps, pumps and valves.

2. Hazardous sludge and contaminated tanks, pipes, soil and miscellaneous debris were transported to Chemical Waste Management's Kettleman Hills Facility for disposal. Copies of the uniform hazardous waste manifests are presented in Appendix C.

3. Nonhazardous concrete from the Sludge Drying Beds, Transfer Sump, and the foundations of the Chromate Reduction Tank, Precipitation Tank and the Process Pump Tank was disposed of at the San Bernardino County Class III Landfill at Barstow and used as fill material on site at the Topock Compressor Station.

4. Except for the vitrified clay sludge pipeline and one other short section, all inactive pipelines that conveyed hazardous waste have been pressure tested. With one exception, all pipeline sections passed the pressure test, indicating that they did not leak. The section that leaked and most of the other pipeline sections were removed and disposed of as hazardous waste.

5. The final confirmation soil samples from beneath all hazardous waste management facilities, including pipeline sections, indicate that hazardous constituent concentrations are less than or only de minimis greater than the site-specific background standards.

In summary, the confirmation sampling shows that all significant contamination has been removed. The original intent of this closure has been accomplished: no hazardous waste has been left on site; and all contaminated waste residues, tanks, sumps, pumps, concrete liners and foundations, pipelines and soils have been removed. For these reasons, the closure meets the intent of federal and state regulations regarding closure. The closure should be considered a "clean" closure with no post-closure, groundwater monitoring or other requirements.

APPENDIX A

BACKGROUND SOIL SAMPLING AND ANALYSIS, COMPRESSOR STATION AREA

BACKGROUND SOIL SAMPLING AND ANALYSIS
COMPRESSOR STATION AREA

CLOSURE OF THE
HAZARDOUS WASTE MANAGEMENT FACILITIES
TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Prepared for:

PACIFIC GAS & ELECTRIC CO.
SAN FRANCISCO, CALIFORNIA

Prepared by:

MITTELHAUSER CORPORATION
LAGUNA HILLS, CALIFORNIA

REV: 0 DECEMBER 1988
REV: 1 APRIL 1989

BACKGROUND SOIL SAMPLING AND ANALYSIS COMPRESSOR STATION AREA

1.0 INTRODUCTION

PG&E submitted a closure plan for hazardous waste management facilities (HWMFs) at its Topock Compressor Station on October 28, 1985. The plan was revised in accordance with agency comments and resubmitted in August 1986. The California Department of Health Services and the U. S. Environmental Protection Agency, Region 9, approved the plan, with modifications, on July 10, 1987.

Some of the background soil samples for closure of the HWMFs have been collected. The samples were collected from the compressor station area in general accordance with Attachment G of the approved closure plan, "Determination of Background". Deviations from the closure plan are explained in Section 6.0.

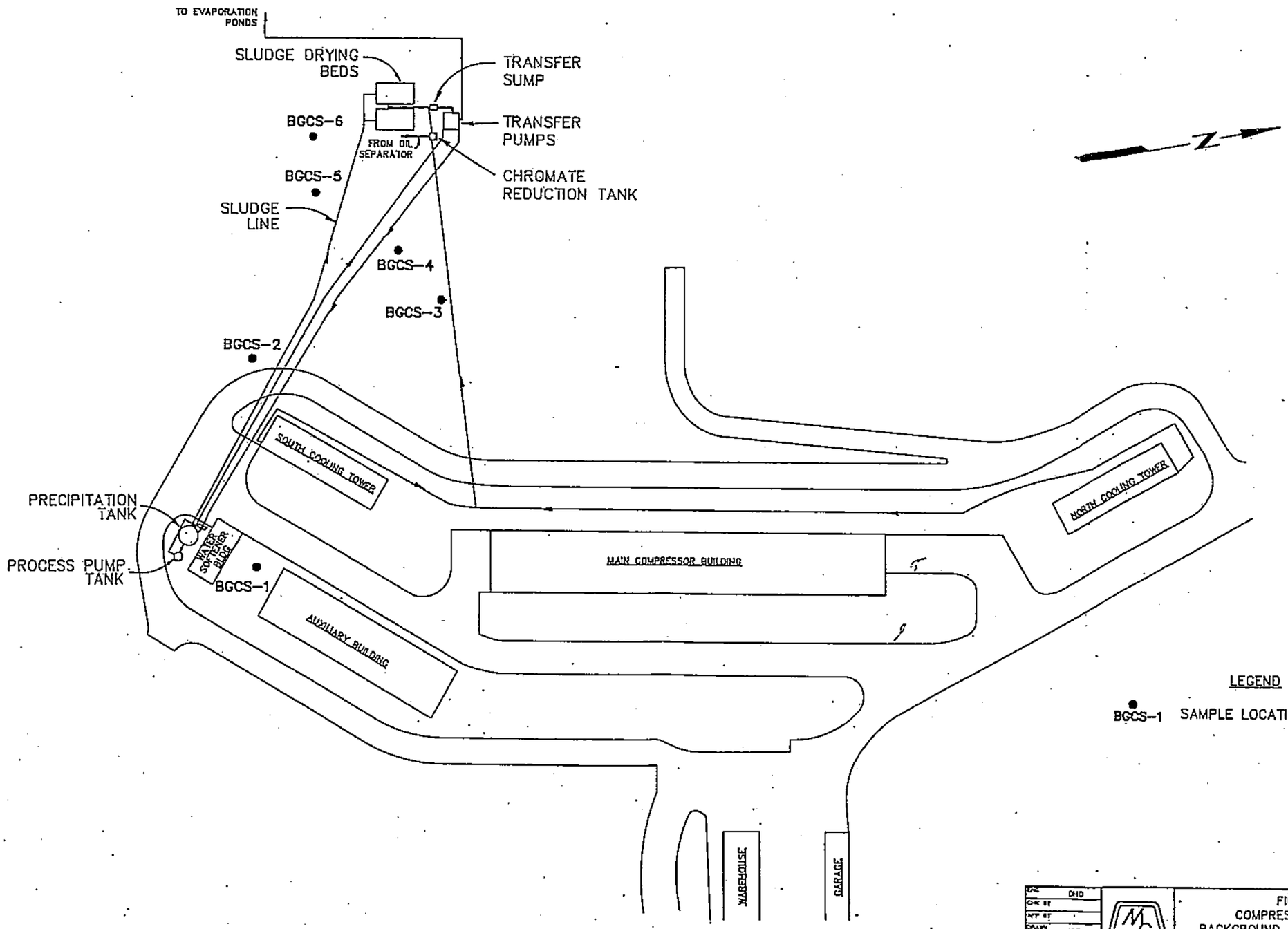
Background soil samples in the Evaporation Pond area will be taken after PG&E's proposed Sampling and Analysis Plan is approved by the regulatory agencies.

The compressor station area background soil samples were taken on September 8, 1988. The samples were delivered to the primary laboratory, Thermo Analytical of Monrovia, and the secondary laboratory, CRL/Enseco of Garden Grove, the next day.

2.0 SAMPLE LOCATIONS AND METHODOLOGIES

Background soil samples were obtained at the six locations shown in Figure 1. Two of the sample locations, BGCS-1 and BGCS-2, are on the same topographic level and in the immediate vicinity of the compressor station. The other four locations are on the lower level near the drying beds, west of the compressor station. The sample locations were chosen to be sufficiently close to the HWMFs to represent the same soil types, yet the distances are sufficient so that contamination by the HWMFs is unlikely. The sample locations were also chosen so that they would be away from structures, underground utilities and other obstructions.

At each sample location a backhoe was used to excavate a shallow trench to a depth of approximately two feet. Samples were collected with a trowel from the walls of the trenches at 6, 12 and 18 inches below grade as outlined in the closure plan. Between samples the trowel was rinsed with deionized water.



DRN	DHD
CHK BY	
APP BY	
DRAWN	KKW
DATE	8/88
SCALE	1"=80'
CAD NO	10420004
FILE NO	P1042

FIGURE 1
COMPRESSOR STATION
BACKGROUND SAMPLE LOCATIONS

PG&E TOPOCK COMPRESSOR STATION

MITTELHAUSER corporation

DWG NO. 1042-14-001

REV 0

TABLE 2

TRACE ELEMENT CONCENTATIONS IN NATURAL SOIL AND COMPRESSOR STATION AREA BACKGROUND MAXIMA AND STANDARDS, mg/kg

ELEMENT	BACKGROUND STANDARDS FOR THE COMPRESSOR STATION AREA	AVERAGE IN NATURAL SOILS (a)	MAXIMUM BACKGROUND CONCENTRATIONS IN THE COMPRESSOR STATION AREA	COMMON RANGE IN NATURAL SOILS (a)
Antimony	7.2	-	8.5	2-10
Barium	373	430	300	100-3000
Beryllium	1	6	1.1	0.1-40
Cadmium	0.6	0.06	0.8	0.01-0.7
Chromium	43	100	47	1-1000
Cobalt	19	8	18	1-40
Copper	20	30	26	2-100
Lead	16	10	15	2-200
Molybdenum	1.7	2	2.1	0.2-5
Nickel	53	40	56	5-500
Silver	1 (b)	0.05	<1	0.01-5
Thallium	5 (b)	-	<5	-
Vanadium	50	100	40	20-500
Zinc	135	50	91	10-300
Arsenic	4.4	5	3.6	1-50
Mercury	0.123	0.03	0.134	0.01-0.3
Selenium	0.5 (b)	0.3	<0.5	0.1-2
Fluorine	914	200	870	10-4000

(a) reference: USEPA, Office of Solid Waste and Emergency Response. Hazardous Waste Land Treatment, SW-874, April 1983.

(b) An element that was not detected in the background samples. The background standard is equal to the analytical detection limit.

subjectively much higher than the others and were greater than typical concentrations in soils (see Section 7.0) were excluded from the calculations. Such values are enclosed in parentheses in Table 1.

6.0 DEVIATIONS FROM THE CLOSURE PLAN

Several parameters were analyzed in addition to those specified in Attachment G of the closure plan, "Determination of Background". Only six parameters are specified for analysis on page G-5: pH, Cr(III), Cr(VI), Ni, Zn and Cu. However, this list of parameters is inconsistent with Attachment B of the closure plan, the "Sampling and Analysis Plan". Attachment B specifies that potentially contaminated samples will be analyzed for fluoride plus all 18 metals listed in 22 Cal. Code of Regulations 66699(b) (including both Cr(III) and Cr(VI)). All 19 parameters specified in Attachment B were analyzed in the background soil samples.

As explained in the Introduction, the background samples are being taken in two phases. The samples for the compressor station area have been taken, while those for the evaporation ponds will be taken after PG&E's proposed Sampling and Analysis Plan is approved by the regulatory agencies.

7.0 DISCUSSION OF ANALYTICAL RESULTS

In Table 2, the background data for the Compressor Station Area is presented with similar data for natural soil. The natural soil data are from an EPA publication, "Hazardous Waste Land Treatment", SW-874, 1983.

The background standards which are presented in Column 1 are taken from Table 1 of this report. Many of the background standards are quite close to the average concentrations of trace metals and fluoride in natural soils (Column 2). All the background standards are within the common ranges of concentrations in natural soil (Column 4).

The maximum concentrations in all the compressor station background samples (Column 3) can also be compared with the common ranges of concentration in natural soil (Column 4). Except for cadmium, the maximum background concentrations are less than the upper end of the common ranges in natural soil. For cadmium, the maximum concentration in the background samples (0.8 mg/kg) only slightly exceeded the upper end of the common range in natural soil (0.7 mg/kg).

4.0 QUALITY ASSURANCE/QUALITY CONTROL

The quality assurance/quality control (QA/QC) program consisted of analyses of sample replicates and spikes and of method blanks and spikes by the primary laboratory. Ten percent of the samples submitted to the primary laboratory were analyzed in this way. In accordance with the Closure Plan, approximately 10% of the samples were also split in the field and submitted to the secondary laboratory for analysis.

When the analytical results for the background samples were received, the data were reviewed according to two criteria. First, concentrations for each sample were subjectively compared to the other background samples and to common concentration ranges and average concentrations of trace metals and fluoride in natural soils. Common ranges and average concentrations in natural soils are listed in Table 2 and discussed in Section 7.0. If any concentration appeared to be an outlier, the laboratories were contacted. Second, if the percent relative difference for the duplicate samples or the matrix or blank spike recoveries fell outside the range 75% to 125%, the laboratories were also contacted. They were first asked to review their notes, calculations and reports for numerical errors. If none could be found, the laboratories were directed to reanalyze selected samples.

After analytical data were amassed for all replicates of each sample, values that were assumed to be outliers according to the above criteria were excluded from statistical calculations of the background standards.

Analytical data for all replicates of each sample are listed together in Table 1. The replicates include both primary and secondary laboratory duplicates and reanalyzed replicates of the same sample.

5.0 BACKGROUND STANDARDS

Attachment G of the closure plan specifies that the background standards will be equal to the arithmetic mean plus three standard deviations. The calculated background standards are listed near the top of Table 1 in a line labeled "Background Standards". For a reported concentration that was less than the analytical detection limit, one-half the detection limit value was used in the statistical calculations.

Reported concentrations from both laboratories, including QA/QC duplicates and reanalysis samples, were included in the statistical calculations. Some concentrations that were

Mitchell Helhauser Corporation

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Topock Compressor Station
HWMF Closure

Background Sampling
April 1989
1042LK

TABLE 1 (continued)

			Ag	Tl	V	Zn	As	Hg	Se	F	Cr VI	pH	Electrical Conductivity, umho/cm
EPA METHOD			6010	7841	6010	7950	7060	7470	7740	340.2	7196	9045	9050d
DETECTION LIMIT			1	5	1	3	0.3	0.002	0.5	1	1	-	-
BACKGROUND STANDARDS			1	5	50	135	4.4	0.123	0.5	914	1	7.19-10.23	728
STLC (mg/l)			5	7.0	24	250	5.0	0.2	1.0	180	5	-	-
TTLC (mg/kg)			500	700	2400	5000	500	20	100	18000	500	-	-
SAMPLE NO.	SAMPLE LOCATION	DEPTH, IN.											
1042-32-9	BGCS-1,1	6	ND	ND	40	75	2.0	0.022	ND	569	ND	9.58	698
1042-32-10	BGCS-1,2	12	ND	ND	39	(270)*	2.2	0.027	ND	(1695)*	ND	9.53	566
1042-32-11	BGCS-1,3	18	ND	ND	36	61	2.2	0.030	ND	801	ND	9.73	317
1042-32-12	BGCS-2,1	6	ND	ND	25	41	3.1	0.039	ND	600	ND	8.55	213
1042-32-12	BGCS-2,1	6	ND	ND	29	47	3.4	0.051	ND			8.64	
1042-32-15	BGCS-2,2	12	ND	ND	ND	ND	3.6	0.034	ND	595	ND	8.80	108
1042-32-15	BGCS-2,2	12	ND	ND	22	54	3.6	0.034	ND		ND	8.80	108
1042-32-16	BGCS-2,2	12	ND	ND	22	28	3.6	ND	ND		ND	7.50	360
1042-32-14	BGCS-2,3	18	ND	ND	ND	ND	2.5	0.029	ND	719	ND	8.70	111
1042-32-14	BGCS-2,3	18	ND	ND	23	29	2.5	0.029	ND		ND	8.70	111
1042-32-17	BGCS-3,1	6	ND	ND	26	91	1.5	0.037	ND	495	ND	9.11	111
1042-32-18	BGCS-3;2	12	ND	ND	19	76	1.7	0.090	ND	471	ND	8.29	224
1042-32-13	BGCS-3,2	12	ND	ND	23	30	3.3	ND	ND	870	ND		
1042-32-13	BGCS-3,2	12									ND	7.50	435
1042-32-13	BGCS-3,2	12											
1042-32-20	BGCS-3,2	12	ND	ND	20	63	1.8	0.004	ND	581	ND	8.96	100
1042-32-30	BGCS-3,2	12	ND	ND	22	62	1.8	0.048	ND		ND	8.49	102
1042-32-19	BGCS-3,3	18	ND	ND	27	82	1.8	0.036	ND	726	ND	8.41	232
1042-32-21	BGCS-4,1	6	ND	ND	24	86	1.9	0.064	ND	510	ND	8.48	329
1042-32-22	BGCS-4,2	12	ND	ND	29	80	2.2	0.046	ND	550	ND	8.52	291
1042-32-23	BGCS-4,3	18	ND	ND	28	74	1.5	0.026	ND	510	ND	8.54	345
1042-32-24	BGCS-5,1	6	ND	ND	27	79	2.4	0.030	ND	524	ND	8.76	273
1042-32-24	BGCS-5,1	6	ND	ND	23	85	2.4	0.034	ND				
1042-32-25	BGCS-5,2	12	ND	ND	25	76	2.1	0.134	ND	657	ND	8.79	221
1042-32-26	BGCS-5,3	18	ND	ND	20	69	2.2	0.074	ND	562	ND	8.94	203
1042-32-27	BGCS-6,1	6	ND	ND	27	77	1.7	0.038	ND	595	ND	8.78	66
1042-32-27	BGCS-6,1	6								548			
1042-32-28	BGCS-6,2	12	ND	ND	21	46	1.8	0.042	ND	550	ND	8.87	56
1042-32-29	BGCS-6,3	18	ND	ND	18	43	2.0	0.047	ND	595	ND	8.78	56
STATISTICS													
MEAN, X			0.5	2.5	23.7	58.3	2.3	0.040	0.25	601	0.5	8.71	235
STANDARD DEVIATION, S			0.0	0.0	8.8	25.4	0.7	0.028	0.00	104	0.0	0.51	164
COEFFICIENT OF VARIATION			0.0	0.0	37.2	43.6	28.8	68.4	0.00	17	0.0	5.83	70
X+3S			0.5	2.5	50.1	134.6	4.4	0.123	0.25	914	0.5	10.23	728
X-3S												7.19	
MINIMUM			0.5	2.5	0.5	1.5	1.5	0.001	0.25	471	0.5	7.50	56
MAXIMUM			0.5	2.5	40.0	91.0	3.6	0.134	0.25	870	0.5	9.73	698

*Value assumed to be an outlier and therefore not included in the statistical calculation.

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HWMF Closure

Background Sampling
April 1989
1042LK

TABLE 1 - COMPRESSOR STATION AREA BACKGROUND
TOTAL CONCENTRATIONS, mg/kg
EXTRACTION METHOD 3050/3060

			Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni
EPA METHOD			6010	6010	6010	6010	6010	6010	6010	7421	6010	6010
DETECTION LIMIT			0.3	1	1	0.5	3	3	3	1	1	3
BACKGROUND STANDARDS			7.2	373	1	0.6	43	19	20	16	1.7	53
STLC (mg/l)			15	100	0.75	1.0	560	80	25	5.0	350	20
TTLC (mg/kg)			500	10000	75	100	2500	8000	2500	1000	3500	2000
SAMPLE NO.	SAMPLE LOCATION	DEPTH, IN.										
1042-32-9	BGCS-1,1	6	ND	150	ND	ND	47	17	ND	6	ND	56
1042-32-10	BGCS-1,2	12	ND	150	1	ND	ND	18	ND	5	ND	38
1042-32-11	BGCS-1,3	18	ND	49	ND	ND	19	14	ND	7	ND	34
1042-32-12	BGCS-2,1	6	ND	180	ND	ND	9	8	ND	5	ND	12
1042-32-12	BGCS-2,1	6	ND	190	ND	ND	11	9	ND	5	ND	16
1042-32-15	BGCS-2,2	12	8.5	ND	ND	ND	ND	ND	ND	5	ND	ND
1042-32-15	BGCS-2,2	12	ND	270	ND	ND	15	6	26	ND	ND	11
1042-32-16	BGCS-2,2	12	ND	180	ND	0.8	24	5.3	9.9	6.7	1.4	17
1042-32-14	BGCS-2,3	18	7.5	ND	ND	ND	ND	ND	ND	4	ND	ND
1042-32-14	BGCS-2,3	18	ND	210	ND	(2.4)*	15	7	15	9	ND	12
1042-32-17	BGCS-3,1	6	ND	160	ND	ND	22	9	ND	9	ND	21
1042-32-18	BGCS-3,2	12	ND	180	ND	ND	21	6	ND	15	ND	12
1042-32-13	BGCS-3,2	12	ND	140	ND	(14)*	26	5.1	11	8.4	2.1	18
1042-32-13	BGCS-3,2	12				0.31			6.6			
1042-32-13	BGCS-3,2	12				ND			2.4			
1042-32-20	BGCS-3,2	12	ND	170	ND	ND	10	7	ND	6	ND	14
1042-32-30	BGCS-3,2	12	ND	220	ND	ND	21	9	ND	12	ND	15
1042-32-19	BGCS-3,3	18	ND	180	ND	ND	7	10	ND	4	ND	13
1042-32-21	BGCS-4,1	6	ND	180	ND	ND	12	9	ND	7	ND	17
1042-32-22	BGCS-4,2	12	ND	170	ND	ND	11	9	ND	7	ND	19
1042-32-23	BGCS-4,3	18	ND	150	ND	ND	9	9	ND	6	ND	15
1042-32-24	BGCS-5,1	6	ND	190	ND	ND	14	9	ND	10	ND	23
1042-32-24	BGCS-5,1	6	ND	220	ND	ND	9	8	ND	8	ND	18
1042-32-25	BGCS-5,2	12	ND	160	ND	ND	16	8	ND	8	ND	28
1042-32-26	BGCS-5,3	18	ND	160	ND	ND	6	8	ND	7	ND	14
1042-32-27	BGCS-6,1	6	ND	300	ND	ND	23	10	ND	12	ND	30
1042-32-28	BGCS-6,2	12	ND	220	ND	ND	17	9	ND	7	ND	20
1042-32-29	BGCS-6,3	18	ND	230	ND	ND	10	7	ND	7	ND	12
STATISTICS												
MEAN, $\bar{x}$			0.75	169.6	0.5	0.25	14.5	8.4	3.7	7.2	0.6	18.8
STANDARD DEVIATION, S			2.14	67.9	0.1	0.13	9.6	3.7	5.6	2.9	0.4	11.3
COEFFICIENT OF VARIATION			283.60	40.1	22.5	49.74	66.3	43.8	149.7	40.8	59.4	60.2
$\bar{x}+3S$			7.17	373.4	0.9	0.63	43.5	19.5	20.4	15.9	1.7	52.6
MINIMUM			0.15	8.5	0.5	0.00	1.5	1.5	1.5	0.5	0.5	1.5
MAXIMUM			8.50	300.0	1.1	0.80	47.0	18.0	26.0	15.0	2.1	56.0

*Value assumed to be an outlier and therefore not included in the statistical calculation.

At the BGCS-1 location the upper six inches were composed of firm, sandy soil but the underlying 1.5 feet were hard, slightly decomposed bedrock. Excavation was difficult, and sampling required much scraping across the face of the trench at the desired depths. The bedrock was dark blue-gray to dark green, slightly weathered, fractured metadiorite. Fractures in the metadiorite appeared to contain reddish-brown clay and silt.

Excavation of the trenches with the backhoe at the other five locations was much less difficult. However, the sampling was still difficult due to cohesiveness of the soils. The soils were well compacted and stiff and were composed of firm, light brown silty sand with a wide range of sizes of angular bedrock fragments.

Replicate samples were collected at BGCS-2 and BGCS-3 for metals analysis by the secondary laboratory.

3.0 BACKGROUND SOIL ANALYTICAL DATA

Analytical data for the background soil samples are presented in Table 1. The laboratory reports are presented in Appendix A.

The sample numbers follow the format BGCS-X,Y. "X" indicates the location, and "Y" indicates the depth of the sample: 1=6", 2=12", 3=18". The sampling locations are shown in Figure 1.

Listed at the top of each data table are the EPA analytical method number, the detection limit, background standard, soluble threshold limit concentration (STLC) and total threshold limit concentration (TTLC). The four digit analytical method numbers are from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, U.S.E.P.A., 1986. The three digit plus one decimal digit methods are from "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, U.S.E.P.A., 1979. As outlined in the closure plan, the background standards are calculated from the mean plus three standard deviations for the data in the corresponding column. The STLCs and TTLCs are from 22 Cal. Code of Regulations, Section 66699.

Statistical parameters are listed at the bottom of Table 1. Included are the mean, standard deviation, coefficient of variation, mean plus three standard deviations, mean minus three standard deviations for pH, and the minimum and maximum values for each parameter.

APPENDIX B

CHAIN-OF-CUSTODY RECORDS AND LABORATORY REPORTS

corporation

23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1042

PROJECT NAME: TOPOCK HWMF CLOSURE

SAMPLED BY: (PRINTED AND SIGNATURE) STEVE NIGER

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 1,4,4b,5,7,9	2,3,4a,4b,5,7,9				PRESERVATIVE	REMARKS
1042-32-1	9-8-88		SOIL	P1-1,2	ONE		✓					SEE SAMPLE
2				P1-1,1			✓					ANALYSIS REQUEST
3				P1-2,2			✓					SHEET FOR
4				P1-2,1			✓					ANALYSIS KEY.
5				P1-3,2			✓					
6				P1-3,1			✓					
9				BGCS-1,1		✓						
10				1,2		✓						
11				1,3		✓						
12				BGCS-2,1		✓						
13				2,2		✓						
14				2,3		✓						
15*				2,2			✓					
17				3,1		✓						
18				3,2		✓						
19				3,3		✓						

RELINQUISHED BY: (SIGNATURE)	DATE 9/8/88	TIME	RECEIVED BY: (SIGNATURE) Haack	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 26	LABORATORY: TMA
				TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 26	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER: ( )
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (✓)YES ( )NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
PINK, CLIENT
GOLD, PROJECT FILE

REMARKS:

MITTELHAUSER corporation

22 HILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1042

PROJECT NAME: TOPOCK HUMF CLOSURE

SAMPLED BY: (PRINTED AND SIGNATURE) STEVE NOEL

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 1, 4, 46, 5, 7, 9	ANALYSIS(ES): 1, 2, 3, 4, 46, 5, 7, 9					PRESERVATIVE	REMARKS
1042-32-21	9-8-[illegible]		SOIL	BGCS-4,1	ONE	✓							SEE SAMPLE
22				4,2		✓							ANALYSIS REQUEST
23				4,3		✓							SHEET FOR
24				5,1		✓							ANALYSIS KEY
25				5,2		✓							
26				5,3		✓							
27				6,1		✓							
28				6,2		✓							
29				6,3		✓							
30*				2,2			✓						

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 26	LABORATORY:
[signature]	9/10/[illegible]		Harck	TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 26	TMA
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER: ( )
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (✓)YES ( )NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
PINK, CLIENT
GOLD, PROJECT FILE

REMARKS:

MITTELHAUSER corporation
23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1042

PROJECT NAME: TOPOCK HWSMF CLOSURE

SAMPLED BY: (PRINTED AND SIGNATURE) STEVE NOEL [signature]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a,5,7	1,4a,46,5,7,9					PRESERVATIVE	REMARKS
1042-32-7	9-8-88		COLL	BP1-3,2	ONE	✓							SEE ATTACHED
1042-32-16	↓		↓	BGCS-2,2	↓		✓						SAMPLE ANALYSIS
1042-32-20	↓		↓	BGCS-3,2	↓		✓						REQUEST SHEET
													FOR KEY

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	3	LABORATORY:
[signature]	9/10/88	1100	[signature]	TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	3	CRL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:		LABORATORY PHONE NUMBER: ( )
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (✓)YES ( )NO		

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
PINK, CLIENT
GOLD, PROJECT FILE

REMARKS:

Received 09/09/88

Results F Sample

SAMPLE ID 1042-32-9

FRACTION 07A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 1,1 Depth Sampled 0.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121

Date Reported OCT - 4 1988

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	N.D.		0.3	500.	15.
Barium	150		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	47.		3	2,500.	560.
Cobalt	17.		3	8,000.	80.
Copper	ND		3	2,500.	25.
Lead	6.	1	1	1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	56		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND	5	1	700.	7.
Vanadium	40		1	2,400.	24.
Zinc	75	3	0.1	5,000.	250.
Arsenic	2.0	0.3		500.	5.
Mercury	0.022	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

 TMA Inc. ( ) REPORT Work Order # 88-)056

Received: 09/09/88

Results by Sample

SAMPLE ID 1042-32-9 FRACTION 07A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 1,1 Depth Sampled 0.5 ft

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	698	umhos/cm	NA
Fluoride	340.2	569	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1.
Oil and Grease	413.1	460	mg/Kg	10
pH	9045	6.58	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 09/09/88 Results [Sample

SAMPLE ID 1042-32-10 FRACTION 08A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 1,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	150		1.	10,000.	100.
Beryllium	1.		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	ND		3.	2,500.	560.
Cobalt	18.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	5.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	38		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	39		1.	2,400.	24.
Zinc	270	3.	0.1	5,000.	250.
Arsenic	2.2	0.3		500.	5.
Mercury	0.027	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

Results by Sample

SAMPLE ID 1042-32-10 FRACTION 08A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 1,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	566	umhos/cm	NA
Fluoride	340.2	1,695	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	N.D.	mg/Kg	10
pH	9045	9.53	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

TMA Inc. REPORT
Results Y Sample

Work Order # 88- 7056

SAMPLE ID 1042-32-11

FRACTION 09A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 1,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	49		1.	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	19.		3.	2,500.	560.
Cobalt	14.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	7.	1	1	1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	34		3.	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND	5	11	700.	7.
Vanadium	36		1	2,400.	24.
Zinc	61	3.	0.1	5,000.	250.
Arsenic	2.2	0.3		500.	5.
Mercury	0.030	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

Results by Sample

SAMPLE ID 1042-32-11 FRACTION 09A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 1,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	317	umhos/cm	NA
Fluoride	340.2	801	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	120	mg/Kg	10
pH	9045	9.73	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 09/09/88

TMA Inc. REPORT Work Order # 88-056

Results I Sample

SAMPLE ID 1042-32-12 FRACTION 10A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 2,1 Depth Sampled 0.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	180		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	9.		3.	2,500.	560.
Cobalt	8.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	5.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	12		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	25		1.	2,400.	24.
Zinc	41	3.	0.1	5,000.	250.
Arsenic	3.1	0.3		500.	5.
Mercury	0.039	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

Results by Sample

SAMPLE ID 1042-32-12 FRACTION 10A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 2,1 Depth Sampled 0.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	218	umhos/cm	NA
Fluoride	340.2	600	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	155	mg/Kg	10
pH	9045	8.55	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

TMA/ARLI
160 Taylor
Monrovia, CA. 91016
(818) 357-3247

PG&E
Topock Compressor Project
Closure of HWMF

Batch One
DOHS Certificate #121

Date Sampled 9/8/88

Date Reported OCT 04 '88

QUALITY CONTROL REPORT
Duplicate Results - Metals Solid Matrix
1042-32-12 BGCS - 2,1 0.5 Feet

	880905610A	Duplicate	Det. Limit
Sb	N.D.	N.D.	0.3
As	3.10	3.37	0.3
Ba	180.	190.	1.
Be	N.D.	ND	1.
Cd	ND	ND	0.5
[illegible]	9.	11.	3.
Co	8.	9.	3.
Cu	ND	ND	3.
Pb	5.	5.	1.
Hg	0.039	0.051	0.002
Mo	ND	ND	1.
Ni	12.	16.	3.
Se	ND	ND	0.5
Ag	ND	ND	1.
TL	ND	ND	5.
V	25.	29.	1.
Zn	41.	47.	3.

ND-None Detected

TMA/ARLI
160 Taylor Street
Monrovia, Ca. 91016
(818) 357-3247

PG&E
Topock Compressor Station
Closure of H W M F

Batch One
DOHS Certificate #121

Date Sampled 9/8/88

Date Reported OCT 04 '88

QUALITY CONTROL REPORT
Hydrogen Ion Concentration (pH)

Identification	Sample	Duplicate
880905802A 1042-32-2 P1-1,1 (3-10in)	8.78	9.07
880905610A 1042-32-12 BGCS-2,1 (0.5ft)	8.55	8.64

Enseco

CRL Environmental - South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL
FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

BGCS 2,2

SAMPLE ID: 1042-32-13

ANALYSIS NO.: 825328-003
ANALYSES: CAM Metals (TTLC)
DATE SAMPLED: 09/08/88
DATE SAMPLE REC'D: 09/09/88
DATE ANALYZED: 09/15-20/88
COLLECTED BY: Mr. Steve Noel
SAMPLE TYPE: Solid
PROJECT: #1042
Topock HWMF Closure

* Extracted by EPA Method 3050
** Digested by EPA Method 3060

PARAMETERS	EPA METHOD	DATE	ANALYST	DETECTION LIMIT	LEVEL FOUND - (mg/kg)
Antimony	6010	09/15/88	JW	1.	ND
Arsenic	7061	09/20/88	JW	1.	3.3
Barium	6010	09/15/88	JW	0.3	140.
Beryllium	6010	09/15/88	JW	0.2	ND
Cadmium	6010	09/15/88	JW	0.3	14.
Chromium	6010	09/15/88	JW	0.3	26.
Chromium,Hex.	7196	09/16/88	ST	1.	ND
Cobalt	6010	09/15/88	JW	0.3	5.1
Copper	6010	09/15/88	JW	0.3	11.
Lead	6010	09/15/88	JW	0.3	8.4
Mercury	7471	09/15/88	JW	0.02	ND
Molybdenum	6010	09/15/88	JW	0.3	2.1
Nickel	6010	09/15/88	JW	0.3	18.
Selenium	7741	09/20/88	JW	0.1	0.14
Silver	6010	09/15/88	JW	0.2	ND
Thallium	7840	09/19/88	JW	0.3	ND
Vanadium	6010	09/15/88	JW	0.3	23.
Zinc	6010	09/15/88	JW	0.3	30.

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco

CRL Environmental - South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL
FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

SAMPLE ID: 1042-32-13

ANALYSIS NO.: 829801-001
ANALYSES: Miscellaneous
DATE SAMPLED: 09/08/88
DATE RELOGGED: 10/24/88
DATE ANALYZED: 10/27 to 11/11/88
SAMPLE TYPE: Solid
PROJECT: #1042
Topock HWMF Closure

PARAMETERS	EPA METHOD	DATE	ANALYST	DETECTION LIMIT	LEVEL FOUND (mg/kg)
Cadmium *	6010	10/27/88	MPT	0.05	0.31
Cadmium *	6010	11/11/88	MPT	0.05	0.09
Copper *	6010	10/27/88	MPT	0.05	6.6
Copper *	6010	11/11/88	MPT	0.05	2.4
Fluoride (TTLC)	340.2	10/27/88	ST	250.	870.

* Reruns were redigested.

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7440 Lincoln Way • Garden Grove, CA 92641
(213) 598-0458 • (714) 898-6370 • (800) LAB-ICRL
FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

SAMPLE ID: 1042-32-13

ANALYSIS NO.: 825328-003
ANALYSES: Miscellaneous
DATE SAMPLED: 09/08/88
DATE SAMPLE REC'D: 09/09/88
DATE ANALYZED: 09/13-16/88
COLLECTED BY: Mr. Steve Noel
SAMPLE TYPE: Solid
PROJECT: #1042
Topock HWMF Closure

PARAMETERS	EPA METHOD	DATE	ANALYST	DETECTION LIMIT	LEVEL FOUND (mg/kg)
Oil & Grease)	413.2	09/15/88	ST	10.	ND
Fluoride (STLC) (mg/L)	340.2	09/16/88	ST	10.	ND
Fluoride (TTLC)	340.2	09/16/88	ST	10.	ND
pH (Units)	9045	09/13/88	ST	N/A	7.50
TDS (mg/L)	160.1	09/16/88	ST	300.	320.
Conductivity (umho/cm)	9050	09/13/88	ST	1.	435.

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Received: 09/09/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-[illegible]-056

SAMPLE ID 1042-32-14

FRACTION 11A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 2,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 10/28/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	210.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	2.4		0.5	100.	1.
Chromium	15.		3.	2,500.	560.
Cobalt	7.		3.	8,000.	80.
Copper	15.		3.	2,500.	25.
Lead	9.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	12.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	23.		1.	2,400.	24.
Zinc	29.	3.	0.1	5,000.	250.
Arsenic	2.5	0.3		500.	5.
Mercury	0.029	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 09/09/88

TMA Inc. REPORT Work Order # 88-056
Results by Sample

SAMPLE ID 1042-32-14 FRACTION 11A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 2,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	7.5		0.3	500.	15.
Barium	ND		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	ND		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	4.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	ND		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	ND		1.	2,400.	24.
Zinc	ND	3.	0.1	5,000.	250.
Arsenic	2.5	0.3		500.	5.
Mercury	0.029	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

TMA Inc. ( ) REPORT

Results by Sample

Work Order # 88-( )056

SAMPLE ID 1042-32-14 FRACTION 11A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 2,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	111	umhos/cm	NA
Fluoride	340.2	719	mg/Kg	1
Hexavalent Chromium	7196	N.D	mg/Kg	1.
Oil and Grease	413.1	190	mg/Kg	10
pH	9045	8.70	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]056

SAMPLE ID 1042-32-15

FRACTION 12A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 2,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 10/28/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	270		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	15.		3.	2,500.	560.
Cobalt	6.		3.	8,000.	80.
Copper	26.		3.	2,500.	25.
Lead	ND	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	11		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	22		1.	2,400.	24.
Zinc	54	3.	0.1	5,000.	250.
Arsenic	3.6	0.3		500.	5.
Mercury	0.034	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

Results by Sample

SAMPLE ID 1042-32-15 FRACTION 12A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 2,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	8.5		0.3	500.	15.
Barium	ND		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	ND		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	5.	1	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	ND		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5	1.	700.	7.
Vanadium	ND		1.	2,400.	24.
Zinc	ND	3	0.1	5,000.	250.
Arsenic	3.6	0.3		500.	5.
Mercury	0.034	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT Work Order # 88- 056

Received: 7/09/88

Results of Sample

SAMPLE ID 1042-32-15 FRACTION 12A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 2,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	108	umhos/cm	NA
Fluoride	340.2	595	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	25	mg/Kg	10
pH	9045	8.80	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Enseco

CRL Environmental - South Coast
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FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr: David Dorn

SAMPLE ID: 1042-32-16

ANALYSIS NO.: 825328-002
ANALYSES: CAM Metals (TTLC)
DATE SAMPLED: 09/08/88
DATE SAMPLE REC'D: 09/09/88
DATE ANALYZED: 09/15-20/88
COLLECTED BY: Mr. Steve Noel
SAMPLE TYPE: Solid
PROJECT: #1042
Topock HWMF Closure

BGCS-22

* Extracted by EPA Method 3050
** Digested by EPA Method 3060

PARAMETERS	EPA METHOD	DATE	ANALYST	DETECTION LIMIT	LEVEL FOUND (mg/kg)
Antimony	6010	09/15/88	JW	1.	ND
Arsenic	7061	09/20/88	JW	1.	3.6
Barium	6010	09/15/88	JW	0.3	180.
Beryllium	6010	09/15/88	JW	0.2	ND
Cadmium	6010	09/15/88	JW	0.3	0.8
Chromium	6010	09/15/88	JW	0.3	24.
Chromium, Hex.	7196	09/16/88	ST	1.	ND
Cobalt	6010	09/15/88	JW	0.3	5.3
Copper	6010	09/15/88	JW	0.3	9.9
Lead	6010	09/15/88	JW	0.3	6.7
Mercury	7471	09/15/88	JW	0.02	ND
Molybdenum	6010	09/15/88	JW	0.3	1.4
Nickel	6010	09/15/88	JW	0.3	17.
Selenium	7741	09/20/88	JW	0.1	0.11
Silver	6010	09/15/88	JW	0.2	ND
Thallium	7840	09/19/88	JW	0.3	ND
Vanadium	6010	09/15/88	JW	0.3	22.
Zinc	6010	09/15/88	JW	0.3	28.

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FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

SAMPLE ID: 1042-32-16

ANALYSIS NO.: 825328-002
ANALYSES: Miscellaneous
DATE SAMPLED: 09/08/88
DATE SAMPLE REC'D: 09/09/88
DATE ANALYZED: 09/13-16/88
COLLECTED BY: Mr. Steve Noel
SAMPLE TYPE: Solid
PROJECT: #1042
Topock HWMF Closure

PARAMETERS	EPA METHOD	DATE	ANALYST	DETECTION LIMIT	LEVEL FOUND (mg/kg)
Oil & Grease	413.2	09/15/88	ST	10.	14.
Fluoride (STLC) (mg/L)	340.2	09/16/88	ST	10.	ND
Fluoride (TTLC)	340.2	09/16/88	ST	10.	ND
pH (Units)	9045	09/13/88	ST	N/A	7.50
TDS (mg/L)	160.1	09/16/88	ST	300.	ND
Conductivity (umho/cm)	9050	09/13/88	ST	1.	360.

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TMA Inc. REPORT
Results by Sample

Work Order # 88[illegible]056

SAMPLE ID 1042-32-17 FRACTION 13A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 3,1 Depth Sampled 0.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	160		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	22.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	9.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	ND		3.	2,000.	20.
Silver	21		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	26		1.	2,400.	24.
Zinc	91	3.	0.1	5,000.	250.
Arsenic	1.5	0.3		500.	5.
Mercury	0.037	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 7/09/88

TMA Inc. REPORT
Results of Sample

Work Order # 88-7056

SAMPLE ID 1042-32-17

FRACTION 13A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 3,1 Depth Sampled 0.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	111	umhos/cm	NA
Fluoride	340.2	495	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	335	mg/Kg	10
pH	9045	9.11	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

IMA Inc. REPORT

Results by Sample

Work Order # 88[illegible]056

SAMPLE ID 1042-32-18 FRACTION 14A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 3,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121

Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	180		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	21.		3.	2,500.	560.
Cobalt	6.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	15.	1	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	12		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5	1.	700.	7.
Vanadium	19		1.	2,400.	24.
Zinc	76	3.	0.1	5,000.	250.
Arsenic	1.7	0.3		500.	5.
Mercury	0.090	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 9/09/88

TMA Inc. REPORT Work Order # 88-056
Results by Sample

SAMPLE ID 1042-32-18 FRACTION 14A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 3,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	224	umhos/cm	NA
Fluoride	340.2	471	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	755	mg/Kg	10
pH	9045	8.29	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]056

SAMPLE ID 1042-32-19

FRACTION 15A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 3,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	180		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	7.		3	2,500.	560.
Cobalt	10.		3	8,000.	80.
Copper	ND		3	2,500.	25.
Lead	4.	1	1	1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	13		3	2,000.	20.
Silver	ND	5	1	500.	5.
Thallium	ND	5	1	700.	7.
Vanadium	27		1	2,400.	24.
Zinc	82	3	0.1	5,000.	250.
Arsenic	1.8	0.3		500.	5.
Mercury	0.036	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT Work Order # 88- 056

Received 9/09/88 Results by Sample

SAMPLE ID 1042-32-19 FRACTION 15A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 3,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	282	umhos/cm	NA
Fluoride	340.2	7.26	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	245	mg/Kg	10
pH	9045	8.41	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

IMA Inc. ( ) REPORT
Results by Sample

Work Order # 88( )056

SAMPLE ID 1042-32-20 FRACTION 16A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled Not Given Depth Sampled Not Given

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	170		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	10.		3.	2,500.	560.
Cobalt	7.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	6.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	14		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	20		1.	2,400.	24.
Zinc	63	3.	0.1	5,000.	250.
Arsenic	1.8	0.3		500.	5.
Mercury	0.004	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT Work Order # 88- 056

Received 7/09/88

Results of Sample

SAMPLE ID 1042-32-20

FRACTION 16A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled Not Given Depth Sampled Not Given

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	170.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	10.		3.	2,500.	560.
Cobalt	7.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	6.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	14		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	20		1.	2,400.	24.
Zinc	63	3.	0.1	5,000.	250.
Arsenic	1.8	0.3		500.	5.
Mercury	0.004	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

IMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]056

SAMPLE ID 1042-32-20 FRACTION 16A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled Not Given Depth Sampled Not Given

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	100	umhos/cm	NA
Fluoride	340.2	581	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	285	mg/Kg	10
pH	9045	8.96	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-056

SAMPLE ID 1042-32-21

FRACTION 17A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 4,1 Depth Sampled 0.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121

Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	180		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	12.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	7.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	17		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	24		1.	2,400.	24.
Zinc	86.	3.	0.1	5,000.	250.
Arsenic	1.9	0.3		500.	5.
Mercury	0.064	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]056

SAMPLE ID 1042-32-21 FRACTION 17A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 4,1 Depth Sampled 0.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	329	umhos/cm	NA
Fluoride	340.2	510	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	245	mg/Kg	10
pH	9045	8.48	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 9/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88- 056

SAMPLE ID 1042-32-22 FRACTION 18A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 4,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	170.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	11.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	7.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	19		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	29		1.	2,400.	24.
Zinc	80.	3.	0.1	5,000.	250.
Arsenic	2.2	0.3		500.	5.
Mercury	0.046	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

SAMPLE ID 1042-32-22 FRACTION 18A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 4,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	291	umhos/cm	NA
Fluoride	340.2	550	mg/Kg	NA
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	205	mg/Kg	10
pH	9045	8.52	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

TMA, Inc. REPORT

Results by Sample

Work Order # 88-056

SAMPLE ID 1042-32-23

FRACTION 19A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 4,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	150		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	9.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	6.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	15		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	28		1.	2,400.	24.
Zinc	74	3.	0.1	5,000.	250.
Arsenic	1.5	0.3		500.	5.
Mercury	0.026	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

TMA Inc. ( ) REPORT
Results by Sample

Work Order # 88-( )056

SAMPLE ID 1042-32-23 FRACTION 19A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 4,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	845	umhos/cm	NA
Fluoride	340.2	510	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	1145	mg/Kg	10
pH	9045	8.54	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract.

Received: 7/09/88

TMA Inc. REPORT

Results by Sample

Work Order # 88- 056

SAMPLE ID 1042-32-24

FRACTION 20A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 5,1 Depth Sampled 0.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DDHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	190		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	14.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	10.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	23		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	27		1.	2,400.	24.
Zinc	79	3.	0.1	5,000.	250.
Arsenic	2.4	0.3		500.	5.
Mercury	0.030	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

TMA Inc. REPORT

Results by Sample

Work Order # 88[illegible]056

SAMPLE ID 1042-32-25

FRACTION 21A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 5,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121

Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	160		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	16.		3	2,500.	560.
Cobalt	8.		3	8,000.	80.
Copper	ND		3	2,500.	25.
Lead	8.	1	1	1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	28		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND	5	1	700.	7.
Vanadium	25		1	2,400.	24.
Zinc	76	3	0.1	5,000.	250.
Arsenic	2.1	0.3		500.	5.
Mercury	0.134	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 9/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-056

SAMPLE ID 1042-32-25 FRACTION 21A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 5,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	221	umhos/cm	NA
Fluoride	340.2	657	mg/Kg	1
Hexavalent Chromium	7196	N.D	mg/Kg	<1
Oil and Grease	413.1	200	mg/Kg	NA
pH	9045	8.79	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-056

SAMPLE ID. 1042-32-26

FRACTION 22A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 5,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported OCT 04 '88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	160		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	6.		3.	2,500.	560.
Cobalt	8.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	7.	1	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	14		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5	1.	700.	7.
Vanadium	20.		1.	2,400.	24.
Zinc	69	3	0.1	5,000.	250.
Arsenic	2.2	0.3		500.	5.
Mercury	0.074	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

Results By Sample

SAMPLE ID 1042-32-26 FRACTION 22A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 5,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/22/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	203	umhos/cm	NA
Fluoride	340.2	562	mg/Kg	1
Hexavalent Chromium	7196	N.D.	mg/Kg	1
Oil and Grease	413.1	895	mg/Kg	NA
pH	9045	8.94	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

Results by Sample

SAMPLE ID 1042-32-28 FRACTION 01A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS-6,2 Depth Sampled 1.0 ft

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported
OCT - 4 1988

California - Title 22 Total Metals (Solid Matr[redacted]

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	220		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		.5	100.	1.
Chromium	17.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	7.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	20		3.	2,000.	20.
Silver	ND	4	1.	500.	5.
Thallium	ND	5	1.	700.	7.
Vanadium	21		1.	2,400.	24.
Zinc	46.	3.	0.1	5,000.	250.
Arsenic	1.8	0.3		500.	5.
Mercury	0.042	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

TMA Inc. REPORT Work Order # 88-0.758
Results by Sample

SAMPLE ID 1042-32-28 FRACTION 01A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 6,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 04/04/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	56	umhos/cm	NA
Fluoride	340.2	550	mg/Kg	1.
Hexavalent Chromium	7196	ND	mg/Kg	1.
Oil and Grease	413.1	610	mg/Kg	10.
pH	9045	8.87	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

Results by Sample

SAMPLE ID 1042-32-29 FRACTION 02A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS-6,3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported
OCT - 4 1988

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		3.	500.	15.
Barium	230		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		.5	100.	1.
Chromium	10.		3.	2,500.	560.
Cobalt	7.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	7.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	12		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5	1.	700.	7.
Vanadium	18		1.	2,400.	24.
Zinc	43	3.	0.1	5,000.	250.
Arsenic	2.0	0.3		500.	5.
Mercury	0.047.	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 09/09/88

TMA Inc. REPORT Work Order # 88-6 358

Results by Sample

SAMPLE ID 1042-32-29 FRACTION 02A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS - 6.3 Depth Sampled 1.5 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 04/04/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	56	umhos/cm	NA
Fluoride	340.2	595	mg/Kg	1.
Hexavalent Chromium	7196	ND	mg/Kg	1.
Oil and Grease	413.1	215	mg/Kg	10.
pH	9045	8.78	pH Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 09/09/88

Results by Sample

SAMPLE ID 1042-32-30 FRACTION 03A TEST CODE MITICS NAME CA Title 22 Total Metals.

Date & Time Collected 09/08/88 Category

Batch# 1 Location Sampled BGCS-3,2 Depth Sampled 1.0 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121

Date Reported OCT - 4 1988

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		3.	500.	15.
Barium	220		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		.5	100.	1.
Chromium	21.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	12.	1.	1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	15		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.	1.	700.	7.
Vanadium	22		1.	2,400.	24.
Zinc	62	3.	0.1	5,000.	250.
Arsenic	1.8	0.3		500.	5.
Mercury	0.048	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA/ARLI
160 Taylor Street
[illegible]ovia, CA. 91016
(818) 357-3247

PG&E
Topock Compressor Station
Closure of H W M F

Batch One
DOHS Certificate #121

Date Sampled 9/8/88

Date Reported

QUALITY CONTROL REPORT
California Waste Extraction With DI Water
Fluoride

Identification	Sample	Duplicate	Det. Limit
880905803B 1042-32-30 BGCS-3,2(1.0ft)	1.05	1.00	0.1
880905610B 1042-32-12 BGCS - 2,1 (0.5 ft.)	1.06	1.05	0.1

Hexavalent Chromium

Identification	Sample	Duplicate	Spike	Det. Limit
88[illegible]05614B [illegible]-32-18 [illegible]CS -3,2 (1.0 ft)	<0.01	<0.01	107%Recovery	0.01
880905611B 1042-32-14 BGCS-2,3 (1.5ft)	<0.01	<0.01	98%Recovery	0.01

Fluoride By Distillation
Analysis Via EPA 340.2

Idebtification	Sample	Duplicate	Spike Recovery(%)
BGCS - 6,1	595.	548	118.

88-12-048

MITTELHAUSER corporation
23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

8 1988

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1042

PROJECT NAME: Topock, HWMF Closure

SAMPLED BY: (PRINTED AND SIGNATURE) Dave Dorn, Dave Dorn

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a, 5a, 6	4a, 5a, 6					PRESERVATIVE	REMARKS
1A	1042-42-1	12/6	800	Sludge	PPT	1		X						
2A	1042-42-2	12/8	930	Water	PPT	2	X							
3A	1042-42-3	12/8	1520	Water	PT	2	X							
4A	1042-42-4	12/8	1115	Soil	PT-S-1 6"	1		X						
5A	1042-42-5	12/8	1120	Soil	PT-S-1 12"	1		X						
6A	1042-42-6	12/8	1125	Soil	PT-S-1 18"	1		X						
7A	1042-42-7	12/8	1210	Conc	PPT-C-1	1		X						
8A	1042-42-8	12/8	1215	Conc	PT-C-1	1		X						
9A	1042-43-1	12/5	1230	Soil	PH1	1		X						
10A	1042-43-2	12/5	1300	Soil	PH2	1		X						
11A	1042-44-1	12/5	1400	Sludge	West Bed	1		X						
12A	1042-44-2	12/5	1400	Sludge	Middle Bed	1		X						
13A	1042-44-3	12/8	815	Conc	West Bed BG	1		X						
14A	1042-44-4	12/8	820	Conc	East Bed BG	1		X						

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 14 / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 16	LABORATORY: TMA
Dave Dorn					
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: Shirley Kirby	LABORATORY PHONE NUMBER: (818) 357-3247
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
PINK, CLIENT
GOLD, PROJECT FILE

REMARKS: Start Cr(VI) analysis ASAP, call Dave Dorn 714-472-2444 with questions, Shipped by Grey hound Bus

Received: 12/09/88

TMA Inc. REPORT
12/23/88 09:13:21

Work Order # 88- 048

REPORT TO: Mittelhauser Corporation
23272 Mill Creek Rd., Ste 300
Laguna Hills, CA 92653

ATTEN: Mr. Dave Dorn

CLIENT: MITTELHAUSER SAMPLES: 14
COMPANY: Mittelhauser Corporation
FACILITY:

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN:
PHONE: 818-357-3247

Shirley Kirby
CERTIFIED BY

CONTACT: SAK

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

WORK ID: 1042 - Topock, HWMF Closure
TAKEN: By Mittelhauser Staff — PG&E
TRANS: By Greyhound Bus — Topock Compressor Station
TYPE: Soils, Sludges, Conc. & Liq. — Closure Plan
P.O. #: Verbal - D. Dorn — 3060 Extraction date for hexavalent chromium was 12/09/88.
INVOICE: under separate cover

SAMPLE IDENTIFICATION

01	1042-42-1
02	1042-42-2
03	1042-42-3
04	1042-42-4
05	1042-42-5
06	1042-42-6
07	1042-42-7
08	1042-42-8
09	1042-43-1
09	1042-43-1 Duplicate
09	1042-43-1 Matrix Spike
09	Blank Spike
09	Reagent Blank
10	1042-43-2
11	1042-44-1
12	1042-44-2
13	1042-44-3
14	1042-44-4

TEST CODES and NAMES used on this report

ASL	Arsenic - Liquids
ASS	Arsenic - Solids
HGL	Mercury - Liquids
HGS	Mercury - Solids
MITICL	CA Title 22 Total Metals
MITICS	CA Title 22 Total Metals
MITWCS	Solid Matrix
MITWCW	Liquid Matrix
SE L	Selenium - Liquids
SE S	Selenium - Solid

RECEIVED
DEC 28 1988

TMA Inc. REPORT Work Order # 88-12-048

Received: 12/09/88

Results by Sample

SAMPLE ID 1042-42-1 FRACTION 01A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/06/88 08:00:00 Category

Batch# 02 Location Sampled PPT Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	360.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	4.6		0.5	100.	1.
Chromium	26,000. **		3.	2,500.	560.
Cobalt	4.7		8.	8,000.	80.
Copper	380. **		8.	2,500.	25.
Lead	91. **	1.		1,000.	5.
Molybdenum	110.		1.	3,500.	350.
Nickel	9.5		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	58.		1.	2,400.	24.
Zinc	6200. * **		3.	5,000.	250.
Arsenic	175. **	0.3		500.	5.
Mercury	0.279	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-: 048
Results by Sample

SAMPLE ID 1042-42-1 FRACTION 01A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/06/88 08:00:00 Category

Batch# 02 Location Sampled PPT Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	43.200	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	7.90	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

TMA Inc. REPORT Work Order # 88-12-048

Received: 12/09/88

Results by Sample

SAMPLE ID 1042-42-2 FRACTION 02A TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 12/08/88 09:30:00 Category

Batch# 02 Location Sampled PPT Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	ND		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.007		0.005	100.	1.
Chromium	5.1		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	ND		0.02	2,500.	25.
Lead	0.55	0.05		1,000.	5.
Molybdenum	ND		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	1.6		0.05	5,000.	250.
Arsenic	0.048	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1 048
Results by Sample

SAMPLE ID 1042-42-2 FRACTION 02B TEST CODE MITWCW NAME Liquid Matrix
Date & Time Collected 12/08/88 09:30:00 Category

Batch# 02 Location Sampled PPT Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	9.2	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	NA		5
pH	9040	6.72	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-42-3

FRACTION 03A TEST CODE MITICL NAME CA Title 22 Total Metals
Date & Time Collected 12/08/88 15:20:00 Category

Batch# 02 Location Sampled PT Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	ND		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.037		0.005	100.	1.
Chromium	0.38		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.10		0.02	2,500.	25.
Lead	0.08	0.05		1,000.	5.
Molybdenum	0.18		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.36		0.05	5,000.	250.
Arsenic	0.018	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1 048

Results by Sample

SAMPLE ID 1042-42-3 FRACTION 03B TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 12/08/88 15:20:00 Category

Batch# 02 Location Sampled PT Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DDHS Certification No. 121
Date Reported 12/23/88

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	5.0	mg/L	0.1
Hexavalent Chromium	7196	0.03	mg/L	0.01
Oil and Grease	413.1	NA		5
pH	9040	8.64	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

TMA Inc. REPORT Work Order # 88-12-048

Received: 12/09/88

Results by Sample

SAMPLE ID 1042-42-4 FRACTION 04A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/08/88 11:15:00 Category

Batch# 02 Location Sampled PT-S-1 Depth Sampled 6"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	98.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	1.0		0.5	100.	1.
Chromium	27.		3.	2,500.	560.
Cobalt	7.0		3.	8,000.	80.
Copper	20.		3.	2,500.	25.
Lead	94. **	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	21.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	26.		1.	2,400.	24.
Zinc	110.		3.	5,000.	250.
Arsenic	1.28	0.3		500.	5.
Mercury	0.033	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1 048
Results by Sample

SAMPLE ID 1042-42-4 FRACTION 04A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/08/88 11:15:00 Category

Batch# 02 Location Sampled PT-S-1 Depth Sampled 6"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	8,200	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	10.03	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-42-5 FRACTION 05A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/08/88 11:20:00 Category

Batch# 02 Location Sampled PT-S-1 Depth Sampled 12"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	120.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	1.1		0.5	100.	1.
Chromium	29.		3.	2,500.	560.
Cobalt	9.7		3.	8,000.	80.
Copper	11.		3.	2,500.	25.
Lead	33.	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	28.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	31.		1.	2,400.	24.
Zinc	46.		3.	5,000.	250.
Arsenic	1.52	0.3		500.	5.
Mercury	0.016	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88- :048

Results by Sample

SAMPLE ID 1042-42-5 FRACTION 05A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/08/88 11:20:00 Category

Batch# 02 Location Sampled PT-S-1 Depth Sampled 12"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	2,400	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	10.13	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-42-6 FRACTION 06A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/08/88 11:25:00 Category

Batch# 02 Location Sampled PT-S-1 Depth Sampled 18"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	91		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	51.		3	2,500.	560.
Cobalt	9.6		3	8,000.	80.
Copper	9.4		3	2,500.	25.
Lead	13.	1		1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	26.		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	31.		1.	2,400.	24.
Zinc	54.		3.	5,000.	250.
Arsenic	1.39	0.3		500.	5.
Mercury	0.032	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1 048
Results by Sample

SAMPLE ID 1042-42-6

FRACTION 06A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/08/88 11:25:00 Category

Batch# 02 Location Sampled PT-S-1 Depth Sampled 18"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	1,100	mg/Kg	1
Hexavalent Chromium	7196	1.1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	10.06	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-42-7 FRACTION 07A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/08/88 12:10:00 Category

Batch# 02 Location Sampled PPT-C-1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	170.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.8		0.5	100.	1.
Chromium	84.		3.	2,500.	560.
Cobalt	4.8		3.	8,000.	80.
Copper	7.8		3.	2,500.	25.
Lead	19.	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	10.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	22.		1.	2,400.	24.
Zinc	74.		3.	5,000.	250.
Arsenic	8.65	0.3		500.	5.
Mercury	0.026	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-: 048

SAMPLE ID 1042-42-7

FRACTION 07A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/08/88 12:10:00 Category

Batch# 02 Location Sampled PPT-C-1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	760	mg/Kg	1
Hexavalent Chromium	7196	9.6	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	12.27	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-42-8

FRACTION 08A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/08/88 12:15:00 Category

Batch# 02 Location Sampled PT-C-1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	91.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.7		0.5	100.	1.
Chromium	26.		3.	2,500.	560.
Cobalt	7.9		3.	8,000.	80.
Copper	9.9		8.	2,500.	25.
Lead	26.	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	8.3		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	13.		1.	2,400.	24.
Zinc	53.		3.	5,000.	250.
Arsenic	10.9	0.3		500.	5.
Mercury	0.108	0.002		100.	1.
Selenium	ND.	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1 048
Results by Sample

SAMPLE ID 1042-42-8 FRACTION 08A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/08/88 12:15:00 Category

Batch# 02 Location Sampled PT-C-1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	560	mg/Kg	1
Hexavalent Chromium	7196	11.5	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	12.05	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-43-1

FRACTION 09A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	170.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	23.		3.	2,500.	560.
Cobalt	5.1		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	10.	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	8.5		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	13.		1.	2,400.	24.
Zinc	30.		3.	5,000.	250.
Arsenic	3.19	0.3		500.	5.
Mercury	0.061	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1 048
Results by Sample

SAMPLE ID 1042-43-1 FRACTION 09A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	498	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	8.57	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-43-1 Duplicate FRACTION 09B TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	180.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	22.		3.	2,500.	560.
Cobalt	5.1		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	20.			1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	6.8		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND			700.	7.
Vanadium	15.		1.	2,400.	24.
Zinc	33.		3.	5,000.	250.
Arsenic	2.48			500.	5.
Mercury	0.043			100.	1.
Selenium	ND			20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1 248
Results by Sample

SAMPLE ID 1042-43-1 Duplicate FRACTION 09B TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	502	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	8.40	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-43-1 Matrix Spike FRACTION 09C TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	% R		AAS	ICP	TTLC	STLC
Antimony	138.			0.3	500.	15.
Barium	87.5			1.	10,000	100.
Beryllium	90.			1.	75	0.75
Cadmium	128.			0.5	100.	1.
Chromium	94.			3.	2,500	560.
Cobalt	93.			3.	8,000	80.
Copper	90.			3.	2,500.	25.
Lead	98.	**			1,000	5.
Molybdenum	75.			1.	3,500	350
Nickel	87.			8.	2,000.	20.
Silver	13.			1.	500.	5.
Thallium	93.5	**			700.	7.
Vanadium	93.			1.	2,400.	24.
Zinc	89.			3.	5,000.	250.
Arsenic	104.	**			500.	5.
Mercury	83.	**			100.	1.
Selenium	45.	* **			20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-048

Results by Sample

SAMPLE ID 1042-43-1 Matrix Spike FRACTION 09C TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	95	% Recovery	1mg/Kg
Hexavalent Chromium	7196	97	% Recovery	1mg/Kg
Oil and Grease	413.1	NA		10
pH	9045	NA		NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID Blank Spike FRACTION 09E TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	% R		AAS	ICP	TTLC	STLC
Antimony	107.			0.3	500.	15.
Barium	110.			1.	10,000.	100.
Beryllium	116.			1.	75.	0.75
Cadmium	108.			0.5	100.	1.
Chromium	122.			3.	2,500.	560.
Cobalt	122.			3.	8,000.	80.
Copper	102.			2.	2,500.	25.
Lead	94.	**			1,000.	5.
Molybdenum	106.			1.	3,500.	350.
Nickel	114.			3.	2,000.	20.
Silver	106.	**		1.	500.	5.
Thallium	110.	**			700.	7.
Vanadium	116.			1.	2,400.	24.
Zinc	124.			3.	5,000.	250.
Arsenic	97.	**			500.	5.
Mercury	94.	**			100.	1.
Selenium	84.	* **			20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-1 048

SAMPLE ID Blank Spike

FRACTION 09E TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	100	% Recovery	1mg/Kg
Hexavalent Chromium	7196	97	% Recovery	1mg/Kg
Oil and Grease	413.1	NA		10
pH	9045	NA		NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract.

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-12-048

Results by Sample

SAMPLE ID 1042-44-1 FRACTION 11A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/05/88 14:00:00 Category

Batch# 02 Location Sampled WEST BED Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	2,750	mg/Kg	1
Hexavalent Chromium	7196	12.3	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	8.35	Units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1 048

Results by Sample

SAMPLE ID 1042-44-2 FRACTION 12A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/05/88 14:00:00 Category

Batch# 02 Location Sampled MIDDLE BED Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	1.0		0.3	500.	15.
Barium	200		1	10,000.	100.
Beryllium	ND		1	75	0.75
Cadmium	0.8		0.5	100	1.
Chromium	2100.		3	2,500.	560.
Cobalt	6.0		3	8,000.	180.
Copper	44.		3	2,500.	125.
Lead	36.	1		1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	12.		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND	5		700.	7.
Vanadium	24.		1.	2,400.	24.
Zinc	760.		3.	5,000.	250.
Arsenic	9.32	0.3		500.	5.
Mercury	0.081	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT

Work Order # 88-12-048

Received: 12/09/88

Results by Sample

SAMPLE ID 1042-44-2 FRACTION 12A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/05/88 14:00:00 Category

Batch# 02 Location Sampled MIDDLE BED Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	940	mg/Kg	1
Hexavalent Chromium	7196	15.2	mg/Kg	1
Oil and Grease	413.1a	NA		10
pH	9045	8.02	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. Environment Agency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1[illegible]048
Results by Sample

SAMPLE ID 1042-44-3 FRACTION 13A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/08/88 08:15:00 Category

Batch# 02 Location Sampled WEST BED BG Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	120.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.9		0.5	100.	1.
Chromium	21.		3.	2,500.	560.
Cobalt	4.0		3.	8,000.	80.
Copper	ND		8.	2,500.	25.
Lead	7.4	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	11.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	13.		1.	2,400.	24.
Zinc	41.		3.	5,000.	250.
Arsenic	3.16	0.3		500.	5.
Mercury	0.067	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-44-3 FRACTION 13A TEST CODE MITWGS NAME Solid Matrix
Date & Time Collected 12/08/88 08:15:00 Category

Batch# 02 Location Sampled WEST BED BG Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	180	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	8.79	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-1:)48

Results by Sample

SAMPLE ID 1042-44-4 FRACTION 14A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/08/88 08:20:00 Category

Batch# 02 Location Sampled EAST BED BG Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	110.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.5		0.5	100.	1.
Chromium	52.		3.	2,500.	560.
Cobalt	3.6		3.	8,000.	80.
Copper	8.7		3.	2,500.	25.
Lead	2.0	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	14.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	12.		1.	2,400.	24.
Zinc	42.		3.	5,000.	250.
Arsenic	4.03	0.3		500.	5.
Mercury	0.073	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-44-4 FRACTION 14A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/08/88 08:20:00 Category

Batch# 02 Location Sampled EAST BED BG Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	380	mg/Kg	1
Hexavalent Chromium	7196	2.7	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	9.76	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes; Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

MITTELHAUSER corporation

23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1042

PROJECT NAME: Topock HWMF closure

SAMPLED BY: (PRINTED AND SIGNATURE) Dave Dorn Dave Dorn

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a, 5a, 7*						PRESERVATIVE	REMARKS
1042-42-9	12/9/88	1245	Soil	PT 6"	1	X							
1042-42-10	12/9	1250	Soil	PT 12"	1	X							
1042-42-12	12/9	1305	Soil	PT 18"	1	X							
1042-42-13	12/9	1350	Soil	PPT 6"	1	X							
1042-42-15	12/9	1355	Soil	PPT 12"	1	X							
1042-42-16	12/9	1400	Soil	PPT 18"	1	X							
1042-44-5	12/9	930	Conc	East Bed	1	X							
1042-44-6	12/9	1005	Conc	West Bed	1	X							
1042-44-7	12/9	1205	Soil	WDB-1 0'	1	X							
1042-44-9	12/9	1215	Soil	WDB-2 0'	1	X							
1042-44-10	12/9	1220	Soil	EDB-1 0'	1	X							
1042-44-11	12/9	1230	Soil	EDB-2 0'	1	X							

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	12	LABORATORY:
Dave Dorn	12/12	1138	[illegible]	TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	12	TMA
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: Shirley Kirby		LABORATORY PHONE NUMBER: (818) 3573247
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	* SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO		

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
PINK, CLIENT
GOLD, PROJECT FILE

REMARKS: Batch 3. Call Dave Dorn upon receipt of samples.

TMA Inc. REPORT Work Order # 88-[illegible]053

eceived: 12/12/88 01/06/89 14:27:28

REPORT TO: Mittelhauser Corporation
23272 Mill Creek Dr., Ste 300
Laguna Hills, CA 92653

ATTEN: Mr. Dave Dorn

CLIENT: MITTELHAUSER SAMPLES: 12
COMPANY: Mittelhauser Corporation
FACILITY:

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN:
PHONE: 818-357-3247

Shirley Kirby
CERTIFIED BY

CONTACT: SAK

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

WORK ID: 1042 - Topock, HWMF Closure
TAKEN: By Mittelhauser Staff
TRANS: TMA/ARLI Staff
TYPE: Soils, Concrete
P.O. #: Verbal - D. Dorn
INVOICE: under separate cover

PG&E
Topock Compressor Station
Closure Plan

SAMPLE IDENTIFICATION	TEST CODES and NAMES used on this report	
01 1042-42-9	AS-S	Arsenic - Solids
02 1042-42-10	HG-S	Mercury - Solids
03 1042-42-12	MTWCS	CAM Title 22 Total Metals
04 1042-42-13	MTWCS	Solid Matrix
05 1042-42-15	SE-S	Selenium - Solids
06 1042-42-16		
07 1042-44-5		
08 1042-44-6		
09 1042-44-7		
10 1042-44-9		
11 1042-44-10		
12 1042-44-11		
12 1042-44-11 Duplicate		
12 1042-44-11 Matrix Spike		
12 Blank Spike		
12 Reagent Blank		

RECEIVED
JAN - 9 1989

Received: 02/09/89

TMA Inc. REPORT

Results by Sample

Work Order # 89-6_040

SAMPLE ID 1042-42-21

FRACTION 05A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled TANKS/DRUMS Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA. 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

California - Title 22 Total Metals (Solid Matrix)

			AAS	ICP	TTLC	STLC
Antimony	72			0.3	500.	15.
Barium	890			1	10,000.	100.
Beryllium	ND			1	75.	0.75
Cadmium	2.			0.5	100.	1.
Chromium	24,000.	*		3	2,500.	560.
Cobalt	3.			3	8,000.	80.
Copper	430.	**		3.	2,500.	25.
Lead	80.	**		1	1,000.	5.
Molybdenum	500			1	3,500.	350.
Nickel	16			3	2,000.	20.
Silver	ND			1	500.	5.
Thallium	ND			5	700.	7.
Vanadium	73			1	2,400.	24.
Zinc	16,000.	* **		3.	5,000.	250.
Arsenic	80.	**	0.3		500.	5.
Mercury	0.46		0.002		100.	1.
Selenium	ND		0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg.

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-6 040

SAMPLE ID Blank Spike FRACTION 06A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected not specified Category

Batch# 4 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

California - Title 22 Total Metals (Solid Matrix)

			AAS	ICP	TTLC	STLC
Antimony	98			0.3	500.	15.
Barium	106			1.	10,000.	100.
Beryllium	112.	* **		1.	75.	0.75
Cadmium	116.	* **		0.5	100.	1.
Chromium	118.			3.	2,500.	560.
Cobalt	116.			3.	8,000.	80.
Copper	104.			3.	2,500.	25.
Lead	108.	*	1.		1,000.	5.
Molybdenum	100			1.	3,500.	350.
Nickel	110		1.	3.	2,000.	20.
Silver	114	**		1.	500.	5.
Thallium	100	**		5.	700.	7.
Vanadium	114			1.	2,400.	24.
Zinc	118.			3.	5,000.	250.
Arsenic	98.	**	0.3		500.	5.
Mercury	109.	* **	0.002		100.	1.
Selenium	99.	* **	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-6[illegible]040

SAMPLE ID 1042-42-20 SPIKE FRACTION 04C TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PPT Depth Sampled 2 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	NA	NA
Fluoride	340.2	99	% R	1
Hexavalent Chromium	7196	100	% R	1
Oil and Grease	413.1	NA	NA	10
pH	9045	NA	NA	NA
Total Dissolved Solids	160	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a. Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-0040

SAMPLE ID 1042-42-20 SPIKE FRACTION 04C TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled Percent Recovery on PPT Depth Sampled 2 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

California - Title 22 Total Metals (Solid Matrix)

			AAS	ICP	TTLC	STLC
Antimony	36.			0.8	500.	15.
Barium	84.			1.	10,000.	100.
Beryllium	78.	* **		1.	75.	0.75
Cadmium	95.	**		0.5	100.	1.
Chromium	82.			3.	2,500.	560.
Cobalt	84.			3.	8,000.	80.
Copper	96.			8.	2,500.	25.
Lead	93.	**		1.	1,000.	5.
Molybdenum	59.			1.	3,500.	350.
Nickel	84.			8.	2,000.	20.
Silver	20.			1.	500.	5.
Thallium	104.	**		5.	700.	7.
Vanadium	85.			1.	2,400.	24.
Zinc	88.			3.	5,000.	250.
Arsenic	94.	**	0.3		500.	5.
Mercury	136.	* **	0.002		100.	1.
Selenium	45.	* **	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT

Work Order # 89-[illegible]040

Received: 02/09/89

Results by Sample

SAMPLE ID 1042-42-20 DUP FRACTION 04B TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PPT Depth Sampled 2 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	NA	NA
Fluoride	340.2	564	mg/Kg	1
Hexavalent Chromium	7198	ND	mg/Kg	1
Oil and Grease	413.1	NA	NA	10
pH	9045	8.74	Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 02/09/89

TMA Inc. REPORT
Results by-sample

Work Order # 89-0040

SAMPLE ID 1042-42-20 DUP FRACTION 04B TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PPT Depth Sampled 2 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

California - Title 22 Total Metals (Solid Matrix)

		AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	65		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	29.		3	2,500.	560.
Cobalt	9.		3	8,000.	80.
Copper	15.		3	2,500.	25.
Lead	4.			1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	26		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND		5	700.	7.
Vanadium	32		1	2,400.	24.
Zinc	38.		3	5,000.	250.
Arsenic	1.2	0.3		500.	5.
Mercury	0.027	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-[illegible]040

SAMPLE ID 1042-42-20 FRACTION 04A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PPT Depth Sampled 2 ft

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	NA	NA
Fluoride	340.2	635	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	NA	10
pH	9045	8.68	Units	NA
Total Dissolved Solids	1503	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-0040

SAMPLE ID 1042-42-20 FRACTION 04A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PPT Depth Sampled 2 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

California - Title 22 Total Metals (Solid Matrix)

		AAS	ICP	TTLC	STLC
Antimony	ND		0	500.	15.
Barium	65		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	32.		3	2,500.	560.
Cobalt	13.		3	8,000.	80.
Copper	19.		3	2,500.	25.
Lead	5.			1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	33		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND		5	700.	7.
Vanadium	41		1	2,400.	24.
Zinc	44.		3	5,000.	250.
Arsenic	1.1	0.3		500.	5.
Mercury	0.020	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-6[illegible]040

SAMPLE ID 1042-42-19 FRACTION 03A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PPT Depth Sampled 3 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	NA	NA
Fluoride	340.2	576	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	NA	10
pH	9045	5.34	Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-6[illegible]040

SAMPLE ID 1042-42-19 FRACTION 03A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PPT Depth Sampled 3 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

California - Title 22 Total Metals (Solid Matrix)

		AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	50		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	0.5		0.5	100.	1.
Chromium	26.		3	2,500.	560.
Cobalt	10.		3	8,000.	80.
Copper	16.		3	2,500.	25.
Lead	5.		3	1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	25		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND		5	700.	7.
Vanadium	38		1	2,400.	24.
Zinc	44.		3	5,000.	250.
Arsenic	1.3	0.3		500.	5.
Mercury	0.007	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-0_040

SAMPLE ID 1042-42-18 FRACTION 02A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PT - 5 - 1 Depth Sampled 2 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	NA	NA
Fluoride	340.2	424	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	NA	10
pH	9045	10.96	Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-0-040

SAMPLE ID 1042-42-18

FRACTION 02A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PT-S-1 Depth Sampled 2 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

California - Title 22 Total Metals (Solid Matrix)

		AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	110		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	0.9		0.5	100.	1.
Chromium	38.		3	2,500.	560.
Cobalt	8.		3	8,000.	80.
Copper	16.		3	2,500.	25.
Lead	10.			1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	19		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND		5	700.	7.
Vanadium	28		1	2,400.	24.
Zinc	45.		3	5,000.	250.
Arsenic	2.4	0.3		500.	5.
Mercury	0.015	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 02/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-02-040

SAMPLE ID 1042-42-17 FRACTION 01A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PT - S - 1 Depth Sampled 4 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/17/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	NA	NA
Fluoride	340.2	421	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	NA	10
pH	9045	11.37	Units	NA
Total Dissolved Solids	160.1	NA	NA	NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 2/09/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-[illegible]040

SAMPLE ID 1042-42-17 FRACTION 01A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 02/08/89 10:00:00 Category

Batch# 4 Location Sampled PT-S-1 Depth Sampled 4 ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DDHS Certification No. 121
Date Reported 02/17/89

California - Title 22 Total Metals (Solid Matrix)

		AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	100		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	26.		3	2,500.	560.
Cobalt	9.		3	8,000.	80.
Copper	15.		3	2,500.	25.
Lead	6.		3	1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	24		3	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND		5	700.	7.
Vanadium	30.		3	2,400.	24.
Zinc	34.		3	5,000.	250.
Arsenic	1.5	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT

Work Order # 89-02-040

Received: 02/09/89

02/17/89 14:00:04

REPORT TO: Mittelhauser Corporation
23272 Mill Creek Dr., Ste 300
Laguna Hills, CA 92653

ATTEN: Mr. Dave Dorn

CLIENT: MITTELHAUSER SAMPLES: 6
COMPANY: Mittelhauser Corporation
FACILITY:

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN:
PHONE: 818-357-3247

Shirley Kirby
CERTIFIED BY

CONTACT: SAK

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

WORK ID: 1042-Topock Closure
TAKEN: By Mittelhauser Staff
TRANS: TMA/ARLI Staff
TYPE: Soil
P.O. #: Verbal - Dave Dorn
INVOICE: under separate cover

PG&E
Topock Compressor Station
Closure Plan

SAMPLE IDENTIFICATION	TEST CODES and NAMES used on this report
01 1042-42-17	MITICS CA Title 22 Total Metals
02 1042-42-18	MITWCS Soil&Matrix
03 1042-42-19	
04 1042-42-20	
04 1042-42-20 DUP	
04 1042-42-20 SPIKE	
05 1042-42-21	
06 Blank Spike	

Received 12/09/88 Results Sample

SAMPLE ID 1042-44-1 FRACTION 11A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/05/88 14:00:00 Category

Batch# 02 Location Sampled WEST BED Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	200		1	10,000.	100.
Beryllium	ND		1	75.	0.75
Cadmium	0.6		0.5	100.	1.
Chromium	680.		3	2,500.	560.
Cobalt	5.9		3	8,000.	80.
Copper	40.		3	2,500.	25.
Lead	25.	1		1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	12.		8	2,000.	20.
Silver	ND		1	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	20.		1.	2,400.	24.
Zinc	320.		3.	5,000.	250.
Arsenic	6.67	0.3		500.	5.
Mercury	0.103	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT Work Order # 88-_048

Received: 12/09/88

Results by Sample

SAMPLE ID 1042-43-2 FRACTION 10A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/05/88 13:00:00 Category

Batch# 02 Location Sampled PH2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340/2	500	mg/Kg	1
Hexavalent Chromium	7196	19	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	8.45	units	NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes: Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID 1042-43-2

FRACTION 10A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/05/88 13:00:00 Category

Batch# 02 Location Sampled PH2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	150		1.	10,000	100.
Beryllium	ND		1.	75	0.75
Cadmium	0.6		0.5	100	1
Chromium	510.		3.	2,500	560
Cobalt	6.0		8.	8,000	80
Copper	8.7		3.	2,500.	25
Lead	38.	1.		1,000	5
Molybdenum	ND		1.	3,500	350
Nickel	6.7		9.	2,000.	20.
Silver	ND		1.	500.	5
Thallium	ND	5.		700.	7
Vanadium	13.		1.	2,400.	24.
Zinc	210.		3.	5,000.	250.
Arsenic	2.42	0.3		500.	5.
Mercury	0.076	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/09/88

TMA Inc. REPORT Work Order # 88-[illegible]048

Results by Sample

SAMPLE ID Reagent Blank FRACTION 09D TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	ND	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	NA		NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/09/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-12-048

SAMPLE ID Reagent Blank

FRACTION 09D TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/05/88 12:30:00 Category

Batch# 02 Location Sampled PH1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 12/23/88

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	ND		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	ND		3.	2,500.	560.
Cobalt	ND		9.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	ND			1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	ND		8.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND			700.	7.
Vanadium	ND		1.	2,400.	24.
Zinc	ND		3.	5,000.	250.
Arsenic	ND			500.	5.
Mercury	0.073			100.	1.
Selenium	ND			20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Enseco

CRL Environmental - South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL
FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

ANALYSIS NO.: 834720-001/003
ANALYSES: EPA Method 9040
DATE SAMPLED: 12/09/88
DATE SAMPLE REC'D: 12/12/88
DATE ANALYZED: 12/15/88
SAMPLE TYPE: Solid
PROJECT: #1042
Topock, HWMF Closure

SAMPLE IDENTIFICATION	pH EPA METHOD 9040 (Units)
1042-42-11	10.18
1042-42-14	9.92
1042-44-~~7~~8	10.35

The Report Cover Letter is an integral part of this report.
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FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

ANALYSIS NO.: 834720-001/003
ANALYSES: EPA Method 340.2
DATE SAMPLED: 12/09/88
DATE SAMPLE REC'D: 12/12/88
DATE ANALYZED: 01/05/89
SAMPLE TYPE: Solid
PROJECT: #1042
Topock, HWMF Closure

SAMPLE IDENTIFICATION	TOTAL FLUORIDE EPA METHOD 340.2 (mg/kg)
1042-42-11	190.
1042-42-14	170.
1042-44-~~58~~	130.

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FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

ANALYSIS NO.: 834720-001/003
ANALYSES: Miscellaneous
DATE SAMPLED: 12/09/88
DATE SAMPLE REC'D: 12/12/88
SAMPLE TYPE: Solid
PROJECT: #1042
Topock, HWMF Closure

QA/QC SUMMARY

Date	Parameter(method)	Average Spike Recovery%	Acceptable Range%	Relative Percent Difference	Acceptable Range%
12/15/88	Antimony (EPA 6010)	105	25-110	3	47
12/20/88	Arsenic (EPA 7061)	105	47-190	8	30
12/15/88	Barium (EPA 6010)	49	37-147	28	33
12/15/88	Beryllium (EPA 6010)	64	36-119	4	25
12/15/88	Cadmium (EPA 6010)	69	52-130	7	28
12/15/88	Chromium (EPA 6010)	107	40-190	3	33
12/15/88	Cobalt (EPA 6010)	70	56-123	8	25
12/15/88	Copper (EPA 6010)	82	49-144	6	23
12/15/88	Lead (EPA 6010)	117	35-180	1	40
12/28/88	Mercury (EPA 7471)	90	25-125	3	51
12/15/88	Molybdenum (EPA 6010)	62	39-124	14	25
12/15/88	Nickel (EPA 6010)	101	55-155	3	25
12/20/88	Selenium (EPA 7741)	52	30-103	8	30
12/15/88	Silver (EPA 6010)	69	44-128	4	25
12/19/88	Thallium (EPA 7840)	55	42-110	11	25
12/15/88	Vanadium (EPA 6010)	86	55-142	4	25
12/15/88	Zinc (EPA 6010)	147	52-165	11	31
12/13/88	Chromium,Hex. (EPA 7196)	100	60-130	0	40
01/05/89	Fluoride (EPA 340.2)	102	87-103	6	15

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MITTELHAUSER corporation

23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

Batch 4

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 1042

PROJECT NAME: Topock Closure

SAMPLED BY: (PRINTED AND SIGNATURE) Dave Dorn Dave Dorn

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a: Total Metals	5a: Total F	7: Soil pH				PRESERVATIVE	REMARKS
1042-42-17	2/8/89	1000	Soil	PT-S-1 4 ft	1	X	X	X					
1042-42-18	2/8	1005	Soil	PT-S-1 2 ft	1	X	X	X					
1042-42-19	2/8	1015	Soil	PPT 3 ft	1	X	X	X					
1042-42-20	2/8	1020	Soil	PPT 2 ft	1	X	X	X					
1042-42-21	2/8	1055	Sludge	Tanks/drums	1	X	X	X					High metals

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	LABORATORY:
Dave Dorn	2/8	400P	Greyhound	5	TMA
				TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 5	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: Shirley Kirby	LABORATORY PHONE NUMBER: (818) 357 3247
RELINQUISHED BY: (SIGNATURE)	DATE 2/9	TIME 13:45	RECEIVED FOR LABORATORY BY: (SIGNATURE) [signature]	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
PINK, CLIENT
GOLD, PROJECT FILE

REMARKS: See Sample Analysis Request Sheet for parameters.

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CRL Environmental - South Coast
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(213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL
FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

SAMPLE ID: 1042-44-B8

ANALYSIS NO.: 834720-003
ANALYSES: CAM Metals (TTLC)
DATE SAMPLED: 12/09/88
DATE SAMPLE REC'D: 12/12/88
DATE ANALYZED: 12/13-28/88
SAMPLE TYPE: Solid
PROJECT: #1042
Topock, HWMF Closure

* Extracted by EPA Method 3050
** Digested by EPA Method 3060

PARAMETERS	EPA METHOD	DATE	ANALYST	DETECTION LIMIT	LEVEL FOUND (mg/kg)
*Antimony	6010	12/15/88	JAW	0.3	0.3
*Arsenic	7061	12/20/88	RH	0.1	1.3
*Barium	6010	12/15/88	JAW	0.05	78.
*Beryllium	6010	12/15/88	JAW	0.05	ND
*Cadmium	6010	12/15/88	JAW	0.05	0.2
*Chromium	6010	12/15/88	JAW	0.05	18.
**Chromium,Hex.	7196	12/13/88	JAW	1.	ND
*Cobalt	6010	12/15/88	JAW	0.05	2.3
*Copper	6010	12/15/88	JAW	0.05	8.1
*Lead	6010	12/15/88	JAW	0.05	4.0
Mercury	7471	12/15/88	RH	0.002	0.019
*Molybdenum	6010	12/15/88	JAW	0.05	0.11
*Nickel	6010	12/15/88	JAW	0.05	6.5
*Selenium	7741	12/15/88	RH	0.1	ND
*Silver	6010	12/15/88	JAW	0.05	ND
*Thallium	7840	12/15/88	RH	0.3	ND
*Vanadium	6010	12/15/88	JAW	0.05	8.1
Zinc	6010	12/15/88	JAW	0.05	93.

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7440 Lincoln Way • Garden Grove, CA 92641
(213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL
FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

SAMPLE ID: 1042-42-14

ANALYSIS NO.: 834720-002
ANALYSES: CAM Metals (TTLC)
DATE SAMPLED: 12/09/88
DATE SAMPLE REC'D: 12/12/88
DATE ANALYZED: 12/13-28/88
SAMPLE TYPE: Solid
PROJECT: #1042
Topock, HWMF Closure

* Extracted by EPA Method 3050
** Digested by EPA Method 3060

PARAMETERS	EPA METHOD	DATE	ANALYST	DETECTION LIMIT	LEVEL FOUND (mg/kg)
*Antimony	6010	12/15/88	JAW	0.3	ND
*Arsenic	7061	12/20/88	RH	0.1	1.2
*Barium	6010	12/15/88	JAW	0.05	12.
*Beryllium	6010	12/15/88	JAW	0.05	0.12
*Cadmium	6010	12/15/88	JAW	0.05	0.21
*Chromium	6010	12/15/88	JAW	0.05	13.
**Chromium,Hex.	7196	12/13/88	JAW	1.	ND
*Cobalt	6010	12/15/88	JAW	0.05	2.0
*Copper	6010	12/15/88	JAW	0.05	6.3
*Lead	6010	12/15/88	JAW	0.05	4.7
Mercury	7471	12/15/88	RH	0.002	0.003
*Molybdenum	6010	12/15/88	JAW	0.05	0.11
*Nickel	6010	12/15/88	JAW	0.05	7.1
*Selenium	7741	12/15/88	RH	0.1	ND
*Silver	6010	12/15/88	JAW	0.05	ND
*Thallium	7840	12/15/88	RH	0.3	ND
*Vanadium	6010	12/15/88	JAW	0.05	8.0
Zinc	6010	12/15/88	JAW	0.05	14.

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco

CRL Environmental - South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL
FAX: (714) 891-5917

LABORATORY REPORT

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

SAMPLE ID: 1042-42-11

ANALYSIS NO.: 834720-001
ANALYSES: CAM Metals (TTLC)
DATE SAMPLED: 12/09/88
DATE SAMPLE REC'D: 12/12/88
DATE ANALYZED: 12/13-28/88
SAMPLE TYPE: Solid
PROJECT: #1042
Topock, HWMF Closure

* Extracted by EPA Method 3050
** Digested by EPA Method 3060

PARAMETERS	EPA METHOD	DATE	ANALYST	DETECTION LIMIT	LEVEL FOUND (mg/kg)
*Antimony	6010	12/15/88	JAW	0.3	0.5
*Arsenic	7061	12/20/88	RH	0.1	1.1
*Barium	6010	12/15/88	JAW	0.05	19.
*Beryllium	6010	12/15/88	JAW	0.05	0.12
*Cadmium	6010	12/15/88	JAW	0.05	0.19
*Chromium	6010	12/15/88	JAW	0.05	8.6
**Chromium,Hex.	7196	12/13/88	JAW	1.	ND
*Cobalt	6010	12/15/88	JAW	0.05	2.0
*Copper	6010	12/15/88	JAW	0.05	5.7
*Lead	6010	12/15/88	JAW	0.05	2.5
Mercury	7471	12/15/88	RH	0.002	ND
*Molybdenum	6010	12/15/88	JAW	0.05	0.16
*Nickel	6010	12/15/88	JAW	0.05	7.1
*Selenium	7741	12/15/88	RH	0.1	ND
*Silver	6010	12/15/88	JAW	0.05	ND
*Thallium	7840	12/15/88	RH	0.3	ND
*Vanadium	6010	12/15/88	JAW	0.05	7.9
Zinc	6010	12/15/88	JAW	0.05	11.

The Report Cover Letter is an integral part of this report.
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Enseco

CRL Environmental - South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL
FAX: (714) 891-5917

January 4, 1989

MITTELHAUSER CORPORATION
23272 Mill Creek Road, Suite 300
Laguna Hills, CA 92653
ATTN: Mr. David Dorn

ANALYSIS NO.: 834720-001/003
ANALYSES: Miscellaneous
DATE SAMPLED: 12/09/88
DATE SAMPLE REC'D: 12/12/88
PROJECT: #1042
Topock, HWMF Closure

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 834720-001/003 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Solid samples are reported on an "as received" basis.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.

REVIEWED

Ferol Kimble
APPROVED

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

MITTELHAUSER corporation
23272 HILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1042

PROJECT NAME: Topock, HWMF Closure

SAMPLED BY: (PRINTED AND SIGNATURE) Dave Dorn

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): Ura Sq 7*						PRESERVATIVE	REMARKS
1042-42-11	12/9/98	1255	Soil	PT 12"	1	X							
1042-42-14	12/9/98	1345	Soil	PPT 6"	1	X							
1042-44-5	12/9/98	1205	Soil	WDB-1 0'	1	X							

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 3	LABORATORY: CRL
Patricia Dexter	12/12	1:55		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 3	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: S. Kindermann	LABORATORY PHONE NUMBER: (714) 8986370
	12/12	6:40 P.M.			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	* SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

*DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
PINK, CLIENT
GOLD, PROJECT FILE

REMARKS: Batch 3, Call Dave Dorn upon receipt of samples.

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID Reagent Blank

FRACTION 12D TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	ND		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	ND		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	ND	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	ND		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	ND		1.	2,400.	24.
Zinc	ND		3.	5,000.	250.
Arsenic	ND	0.3		500.	5.
Mercury	0.073	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-053

SAMPLE ID Reagent Blank FRACTION 12D TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	< 1.0	mg/Kg	1
Hexavalent Chromium	7198	< 1.0	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	NA		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID Blank Spike FRACTION 12E TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	100.60	% Recovery	1
Hexavalent Chromium	7196	97.40	% Recovery	1
Oil and Grease	413.1	NA		10
pH	9045	NA		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT Work Order # 88-1053
Results by Sample

SAMPLE ID Blank Spike FRACTION 12E TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg		AAS	ICP	TTLC	STLC
Antimony	104.			0.3	500.	15.
Barium	106.			1.	10,000.	100.
Beryllium	114.	* **		1.	75.	0.75
Cadmium	95.	**		0.5	100.	1.
Chromium	126.			3.	2,500.	560.
Cobalt	126.			3.	8,000.	80.
Copper	100.			5.	2,500.	25.
Lead	109.		1.		1,000.	5.
Molybdenum	102.			1.	3,500.	350.
Nickel	116.			3.	2,000.	20.
Silver	126.	**		1.	500.	5.
Thallium	95.	**	5.		700.	7.
Vanadium	120.				2,400.	24.
Zinc	126.			3.	5,000.	250.
Arsenic	99.	**	0.3		500.	5.
Mercury	95.	**	0.002		100.	1.
Selenium	80.	* **	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-1053

SAMPLE ID 1042-44-11 Matrix Spike FRACTION 12C TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	97.39	% Recovery	1
Hexavalent Chromium	7196	98.10	% Recovery	1
Oil and Grease	413.1	NA		10
pH	9045	NA		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

SAMPLE ID 1042-44-11 Matrix Spike FRACTION 12C TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	% R		AAS	ICP	TTLC	STLC
Antimony	82.			0.3	500.	15.
Barium	80.			1.	10,000.	100.
Beryllium	85.	* **		1.	75.	0.75
Cadmium	118.	* **		0.5	100.	1.
Chromium	104.			3.	2,500.	560.
Cobalt	91.			3.	8,000.	80.
Copper	84.			3.	2,500.	25.
Lead	93.		1.		1,000.	5.
Molybdenum	65.			1.	3,500.	350.
Nickel	86.			3.	2,000.	20.
Silver	3.			1.	500.	5.
Thallium	95.	**	5.		700.	7.
Vanadium	93.			1.	2,400.	24.
Zinc	99.			3.	5,000.	250.
Arsenic	140.	**	0.3		500.	5.
Mercury	94.5	**	0.002		100.	1.
Selenium	52.	* **	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-44-11 Duplicate FRACTION 12B TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	7050	NA		NA
Fluoride	340.2	621	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413	NA		10
pH	9045	ND 7.1		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA, Inc. REPORT
Results by Sample

Work Order # 88-053

SAMPLE ID 1042-44-11 Duplicate FRACTION 12B TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	120.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	47.		3.	2,500.	560.
Cobalt	8.3		3.	8,000.	80.
Copper	1.8		3.	2,500.	25.
Lead	2.8	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	9.1		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	29.		1.	2,400.	24.
Zinc	56.		3.	5,000.	250.
Arsenic	1.14	0.3		500.	5.
Mercury	0.030	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-44-11

FRACTION 12A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	791	mg/Kg	1
Hexavalent Chromium	7198	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	10.85		NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]53

SAMPLE ID 1042-44-11 FRACTION 12A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:30:00 Category

Batch# 03 Location Sampled EDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND.		0.3	500.	15.
Barium	110.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	37.		3.	2,500.	560.
Cobalt	8.2		3.	8,000.	80.
Copper	3.8		3.	2,500.	25.
Lead	4.4	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	9.3		3.	2,000.	20.
Silver	ND.		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	24.		1.	2,400.	24.
Zinc	53.		3.	5,000.	250.
Arsenic	1.21	0.3		500.	5.
Mercury	0.016	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. ( ) REPORT
Results by Sample

Work Order # 88-( )053

SAMPLE ID 1042-44-10 FRACTION 11A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 12:20:00 Category

Batch# 03 Location Sampled EDB-1 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	504	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	11.25		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

TMA Inc. REPORT Work Order # 88-[illegible]053

Received: 12/12/88

Results by Sample

SAMPLE ID 1042-44-10 FRACTION 11A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/09/88 12:20:00 Category

Batch# 03 Location Sampled EDB-1 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3.	500.	15.
Barium	120.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	23.		3.	2,500.	560.
Cobalt	6.4		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	17.	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	12.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	18.		1.	2,400.	24.
Zinc	34.		3.	5,000.	250.
Arsenic	1.63	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-( )053

SAMPLE ID 1042-44-9

FRACTION 10A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/09/88 12:15:00 Category

Batch# 03 Location Sampled WDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	528	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	10.53		NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-44-9

FRACTION 10A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:15:00 Category

Batch# 03 Location Sampled WDB-2 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	110.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	22.		3.	2,500.	560.
Cobalt	7.1		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	15.	1		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	7.5			2,000.	20.
Silver	ND			500.	5.
Thallium	ND			700.	7.
Vanadium	21.			2,400.	24.
Zinc	33.		3.	5,000.	250.
Arsenic	1.29	0.3		500.	5.
Mercury	0.014	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-44-7 FRACTION 09A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 12:05:00 Category

Batch# 03 Location Sampled WDB-1 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	310	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	10.21		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-44-7

FRACTION 09A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:05:00 Category

Batch# 03 Location Sampled WDB-1 Depth Sampled 0'

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	210.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.5		0.5	100.	1.
Chromium	30.		3.	2,500.	560.
Cobalt	8.3		3.	8,000.	80.
Copper	3.1		3.	2,500.	25.
Lead	5.2	1		1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	11.		3	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5		700.	7.
Vanadium	20.		1	2,400.	24.
Zinc	100.		3.	5,000.	250.
Arsenic	1.84	0.3		500.	5.
Mercury	0.012	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT

Work Order # 88-[illegible]053

Received: 12/12/88

Results by Sample

SAMPLE ID 1042-44-6 FRACTION 08A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/09/88 10:05:00 Category

Batch# 03 Location Sampled West Bed Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	824	mg/Kg	1
Hexavalent Chromium	7196	3.9	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	12.1		NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]53

SAMPLE ID 1042-44-6

FRACTION 08A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 10:05:00 Category

Batch# 03 Location Sampled West Bed Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California — Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	130.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.8		0.5	100.	1.
Chromium	45.		3.	2,500.	560.
Cobalt	4.4		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	23.	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	7.5		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	21.		1.	2,400.	24.
Zinc	60.		3.	5,000.	250.
Arsenic	3.74	0.3		500.	5.
Mercury	0.231	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

TMA Inc. REPORT Work Order # 88[illegible]053

Received: 12/12/88

Results by Sample

SAMPLE ID 1042-44-5 FRACTION 07A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/09/88 09:30:00 Category

Batch# 03 Location Sampled East Bed Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	7050	NA		NA
Fluoride	340.2	564	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	11.16		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract.

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-1 053

SAMPLE ID 1042-44-5 FRACTION 07A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 09:30:00 Category

Batch# 03 Location Sampled East Bed Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	110.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.5		0.5	100.	1.
Chromium	120.		3.	2,500.	560.
Cobalt	5.4		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	5.0	1		1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	5.8		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	13.		1.	2,400.	24.
Zinc	150.		3.	5,000.	250.
Arsenic	3.92	0.3		500.	5.
Mercury	0.077	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-053

SAMPLE ID 1042-42-16

FRACTION 06A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 14:00:00 Category

Batch# 03 Location Sampled PPT Depth Sampled 18"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	548	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	9.87		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]53

SAMPLE ID 1042-42-16 FRACTION 06A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 14:00:00 Category

Batch# 03 Location Sampled PPT Depth Sampled 18"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	120.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.6		0.5	100.	1.
Chromium	50.		3.	2,500.	560.
Cobalt	11.		3.	8,000.	80.
Copper	23.		3.	2,500.	25.
Lead	29.	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	25.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	30.		1.	2,400.	24.
Zinc	71.		3.	5,000.	250.
Arsenic	1.60	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-42-15

FRACTION 05A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 13:55:00 Category

Batch# 03 Location Sampled PPT Depth Sampled 12"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	7050	NA		NA
Fluoride	340.2	599	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	[illegible]		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT Work Order # 88-. 053

Results by Sample

SAMPLE ID 1042-42-15 FRACTION 05A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 12/09/88 13:55:00 Category

Batch# 03 Location Sampled PPT Depth Sampled 12"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	ug/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	90.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.7		0.5	100.	1.
Chromium	35.		3.	2,500.	560.
Cobalt	12.		3.	8,000.	80.
Copper	14.		3.	2,500.	25.
Lead	28.	1.		1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	25.		3.	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5.		700.	7.
Vanadium	37.			2,400.	24.
Zinc	65.		3.	5,000.	250.
Arsenic	1.11	0.3		500.	5.
Mercury	0.015	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT

Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-42-13

FRACTION 04A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 12/09/88 13:50:00 Category

Batch# 03 Location Sampled PPT Depth Sampled 6"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	801	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	9.84		NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT Work Order # 88-[illegible]953
Results by Sample

SAMPLE ID 1042-42-13 FRACTION 04A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 13:50:00 Category

Batch# 03 Location Sampled PPT Depth Sampled 6"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	ug/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	81.		1	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.6		0.5	100.	1.
Chromium	31.		3.	2,500.	560.
Cobalt	12.		3.	8,000.	80.
Copper	12.		3.	2,500.	25.
Lead	29.	1		1,000.	5.
Molybdenum	ND		1	3,500.	350.
Nickel	25.		3	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5		700.	7.
Vanadium	37.		1	2,400.	24.
Zinc	76.		3.	5,000.	250.
Arsenic	1.17	0.3		500.	5.
Mercury	0.006	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-42-12 FRACTION 03A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 13:05:00 Category

Batch# 03 Location Sampled PT Depth Sampled 18"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	804	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	10.23		NA
Total Dissolved Solids	160.1	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT Work Order # 88-. 053
Results by Sample

SAMPLE ID 1042-42-12 FRACTION 03A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 13:05:00 Category

Batch# 03 Location Sampled PT Depth Sampled 18"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	180.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.6		0.5	100.	1.
Chromium	22.		3.	2,500.	560.
Cobalt	8.6		3.	8,000.	80.
Copper	8.0		3.	2,500.	25.
Lead	2.7	1.		1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	22.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	29.			2,400.	24.
Zinc	64.		3.	5,000.	250.
Arsenic	1.78	0.3		500.	5.
Mercury	0.007	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-42-10 FRACTION 02A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 12:50:00 Category

Batch# 03 Location Sampled PT Depth Sampled 12"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DDHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	869	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	9.68		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-..053

SAMPLE ID 1042-42-10

FRACTION 02A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:50:00 Category

Batch# 03 Location Sampled PT Depth Sampled 12"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California — Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	99.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.7		0.5	100.	1.
Chromium	18.		3.	2,500.	560.
Cobalt	6.4		3.	8,000.	80.
Copper	ND		3.	2,500.	25.
Lead	1.8	1		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	17.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND			700.	7.
Vanadium	27.		1.	2,400.	24.
Zinc	26.		3.	5,000.	250.
Arsenic	1.84	0.3		500.	5.
Mercury	0.023.	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-[illegible]053

SAMPLE ID 1042-42-9

FRACTION 01A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 12/09/88 12:45:00 Category

Batch# 03 Location Sampled PT Depth Sampled 6"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA		NA
Fluoride	340.2	740	mg/Kg	1
Hexavalent Chromium	7196	< 1	mg/Kg	1
Oil and Grease	413.1	NA		10
pH	9045	10.38		NA
Total Dissolved Solids	160	NA		NA

NA = Not analyzed
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 12/12/88

TMA Inc. REPORT
Results by Sample

Work Order # 88-. 053

SAMPLE ID 1042-42-9

FRACTION 01A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 12/09/88 12:45:00 Category

Batch# 03 Location Sampled PT Depth Sampled 6"

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 01/06/89

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	98.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	0.6		0.5	100	1
Chromium	20.		3.	2,500	560
Cobalt	9.5		3.	8,000	80
Copper	4.1		3.	2,500	25
Lead	2.8	1		1,000.	5
Molybdenum	ND		1	3,500	350
Nickel	20.		3.	2,000	20
Silver	ND			500.	5
Thallium	ND			700.	7
Vanadium	28.			2,400.	24
Zinc	38.		3.	5,000.	250.
Arsenic	0.99	0.3		500.	5.
Mercury	0.018	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Page 2 TMA ARLI REPORT Work Order # 0711 77

Received 1/16/89 02/05/90 21:43

REPORT TO: Mittelhauser Corporation
23272 Mill Creek Dr., Ste 300
Laguna Hills, CA 92653

ATTEN: David Dorn

CLIENT: MITTELHAUSER SAMPLES: 9
COMPANY: Mittelhauser Corporation
FACILITY: Topock

WORK ID: 1042/Batch# 5
TAKEN: Mittelhauser Staff
TRANS: Greyhound
TYPE: Liquid/Soil
P.O. #: Verbal by Dave Dorn
INV. #: 611979

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

Robert Marcbek
CERTIFIED BY

CONTACT: SAK

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

PG&E
Topock Compressor Station
Closure Plan
Previously Reported on 12/01/89
First Reported on 12/01/89

SAMPLE IDENTIFICATION

01	1042-52-1
02	1042-51-1
03	1042-43-3
04	1042-51-2
05	1042-51-3
05	1042-51-3 SPIKE
05	1042-51-3 BLANK SPIKE
06	1042-51-4
07	1042-43-4
08	1042-51-5
08	1042-51-5 DUPLICATE
08	1042-51-5 SPIKE
09	1042-43-5
09	1042-43-5 DUPLICATE

TEST CODES and NAMES used on this report

COND-S	Specific Conductance Soil
CRHEXS	Hexavalent Chromium
CR-HEX	Hexavalent Chromium
FKUGRI	Fluoride (Direct in Water)
FeSoa	Fluoride in Solid (dist)
FeW	Fluoride in Water (dist)
MITICL	CA Title 22 Total Metals
MITICS	CA Title 22 Total Metals
MITWCS	Solid Matrix
MITWCW	Liquid Matrix
OIL GR	Oil and Grease - gravimet.
OIL GS	Oil and Grease - gravimet.
PH	pH of liquids
PH SOL	pH of Solids
TDS	Total Dissolved Solids

Received 11/16/89

Results by Sample

SAMPLE ID 1042-43-3 FRACTION 03A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PH - 3 Depth Sampled 3 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	199.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.4	100.	1.
Chromium	25.		3.	2,500.	560.
Cobalt	7.		3.	8,000.	80.
Copper	9.		3.	2,500.	25.
Lead	4.		1.	1,000.	5.
Molybdenum	ND		3.	3,500.	350.
Nickel	16.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND		1.	700.	7.
Vanadium	23.		1.	2,400.	24.
Zinc	37.		3.	5,000.	250.
Arsenic	2.1	0.3		500.	5.
Mercury	0.032	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: [illegible]/16/89 Results by Sample

SAMPLE ID 1042-43-3 FRACTION 03A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PH - 3 Depth Sampled 3 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	320	umho/cm	NA
Fluoride	340.2	520	mg/Kg	1
Hexavalent Chromium	7196	2	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	9.96	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results by Sample

SAMPLE ID 1042-43-4

FRACTION 07A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PH - 4 Depth Sampled 3 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	5.8		0.3	500.	15.
Barium	175.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	35.		3.	2,500.	560.
Cobalt	6.		3.	8,000.	80.
Copper	8.		2.	2,500.	25.
Lead	9.			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	17.		3.	2,000.	20.
Silver	ND			500.	5.
Thallium	ND.			700.	7.
Vanadium	23.		1.	2,400.	24.
Zinc	53.		3.	5,000.	250.
Arsenic	2.1	0.3		500.	5.
Mercury	0.006	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Page 17

Received 16/89

Results by Sample

SAMPLE ID 1042-43-4

FRACTION 07A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PH - 4 Depth Sampled 3 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	270	umho/cm	NA
Fluoride	340.2	480	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	9.4	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. Environment Agency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/16/89

Results by Sample

SAMPLE ID 1042-43-5

FRACTION 09A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PH - 5 Depth Sampled 6 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	218.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75.
Cadmium	ND		0.5	100.	1.
Chromium	12.		3.	2,500.	560.
Cobalt	7.		3.	8,000.	80.
Copper	5.		3.	2,500.	25.
Lead	6.			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	11.			2,000.	20.
Silver	ND			500.	5.
Thallium	ND			700.	7.
Vanadium	13.			2,400.	24.
Zinc	29.		3.	5,000.	250.
Arsenic	2.2	0.3		500.	5.
Mercury	0.150	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 16/89

Results by Sample

SAMPLE ID 1042-43-5 FRACTION 09A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PH - 5 Depth Sampled 6 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	160	umho/cm	NA
Fluoride	340.2	570	mg/Kg	1
Hexavalent Chromium	7198	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.42	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results by Sample

SAMPLE ID 1042-43-5 DUPLICATE FRACTION 09B TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PH - 5 Depth Sampled 6 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	201		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	11.		3.	2,500.	560.
Cobalt	4.		3.	8,000.	80.
Copper	5.		3.	2,500.	25.
Lead	5.	1.		1,000.	5.
Molybdenum	15.			3,500.	350.
Nickel	9.			2,000.	20.
Silver	ND			500.	5.
Thallium	ND			700.	7.
Vanadium	8.		1.	2,400.	24.
Zinc	29.		3.	5,000.	250.
Arsenic	2.7	0.3		500.	5.
Mercury	0.172	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 16/89

TMA INC. REPORT Work Order # 07 1 77

Results by Sample

SAMPLE ID 1042-51-1 FRACTION 02B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/13/89 Category

Batch# 5 Location Sampled Cooling T. Blowdown Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.44		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	0.12		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.16		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.3		0	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.07		0.05	5,000.	250.
Arsenic	0.080	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/16/89

Results by Sample

SAMPLE ID 1042-51-1 FRACTION 02A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/13/89 Category

Batch# 5 Location Sampled Cooling T. Blowdown Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	27	mg/L	0.1
Hexavalent Chromium	7196	0.05	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	8.44	pH	NA
Total Dissolved Solids	160.1	8100	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received /16/89

Results by Sample

SAMPLE ID 1042-51-2

FRACTION 04B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PG - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.21		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.014		0.005	100.	1.
Chromium	0.17		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.43		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	1.6		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.52		0.05	5,000.	250.
Arsenic	0.027	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/16/89

Results by Sample

SAMPLE ID 1042-51-2 FRACTION 04B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PG - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.21		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.014		0.005	100.	1.
Chromium	0.17		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.43		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	1.6		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.03	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.53		0.05	5,000.	250.
Arsenic	0.027	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 16/89

Results by Sample

SAMPLE ID 1042-51-2 FRACTION 04A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PG - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	5.7	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	34	mg/L	5
pH	9040	7.35	pH	NA
Total Dissolved Solids	160.1	1300	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results By Sample

SAMPLE ID 1042-51-3 FRACTION 05A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PC - 1 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	123.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	10.		3.	2,500	560
Cobalt	6.		3	8,000	80
Copper	10.		3	2,500	25
Lead	9.4			1,000	5
Molybdenum	ND			3,500	350
Nickel	16.		3	2,000	20
Silver	ND		1	500	5
Thallium	ND	5		700.	7
Vanadium	10.		1	2,400.	24
Zinc	26.		3	5,000.	250
Arsenic	2.	0.3		500.	5.
Mercury	0.032	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

eceived 16/89

Results by Sample

AMPLE ID 1042-51-3 FRACTION 05A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/14/89 Category

atch# 5 Location Sampled PC - 1 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	120	umho/cm	NA
Fluoride	340.2	310	mg/Kg	1
Hexavalent Chromium	7198	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.59	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results by Sample

SAMPLE ID 1042-51-3 SPIKE FRACTION 05B TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled Percent Recovery Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	% Rec.		AAS	ICP	TTLC	STLC
Antimony	86.			0.3	500.	15.
Barium	89.			1.	10,000.	100.
Beryllium	90.	*		1.	75.	0.75
Cadmium	88.			0.5	100.	1.
Chromium	87.			3.	2,500.	560.
Cobalt	89.			3.	8,000.	80.
Copper	89.			3.	2,500.	25.
Lead	88.				1,000.	5.
Molybdenum	88.				3,500.	350.
Nickel	90.				2,000.	20.
Silver	86.				500.	5.
Thallium	99.				700.	7.
Vanadium	86.				2,400.	24.
Zinc	84.			3.	5,000.	250.
Arsenic	102.	**	0.3		500.	5.
Mercury	95.	**	0.002		100.	1.
Selenium	66.	* **	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 16/89

Results By Sample

SAMPLE ID 1042-51-3 BLANK SPIKE FRACTION 05C TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	% Rec.		AAS	ICP	TTLC	STLC
Antimony	104.			0.3	500.	15.
Barium	103.			1.	10,000.	100.
Beryllium	102.	* **		1.	75.	0.75
Cadmium	99.	**		0.5	100.	1.
Chromium	103.			3.	2,500.	560.
Cobalt	102.			3.	8,000.	80.
Copper	103.			3.	2,500.	25.
Lead	103.		1.		1,000.	5.
Molybdenum	107.			1.	3,500.	350.
Nickel	102.			3.	2,000.	20.
Silver	90.				500.	5.
Thallium	101.				700.	7.
Vanadium	97.			1.	2,400.	24.
Zinc	99.			3.	5,000.	250.
Arsenic	113.	**	0.3		500.	5.
Mercury	117.	* **	0.002		100.	1.
Selenium	87.	* **	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 11/16/89

Results By Sample

SAMPLE ID 1042-51-4 FRACTION 06B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PC - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.15		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.007		0.005	100.	1.
Chromium	ND		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.12		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.4		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.07	500.	5.
Thallium	ND	0.5		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.33		0.05	5,000.	250.
Arsenic	0.013	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received [illegible]/16/89

Results by Sample

SAMPLE ID 1042-51-4 FRACTION 06A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PC - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.6	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	7.28	pH	NA
Total Dissolved Solids	160.1	1100	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results by Sample

SAMPLE ID 1042-51-5 FRACTION 08B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PB - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.15		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.047		0.005	100.	1.
Chromium	0.05		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.11		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.02	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.24		0.05	5,000.	250.
Arsenic	0.017	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

eceived 16/89

Results by Sample

AMPLE ID 1042-51-5 FRACTION 08A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/14/89 Category

atch# 5 Location Sampled PB - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	8.8	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	7.54	pH	NA
Total Dissolved Solids	160.1	1000	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/16/89

Results by Sample

SAMPLE ID 1042-51-5 DUPLICATE FRACTION 08D TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled PB - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	9.8	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	NA	mg/L	5
pH	9040	7.56	pH	NA
Total Dissolved Solids	160.1	9.70	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received /16/89

Results by Sample

SAMPLE ID 1042-51-5 SPIKE FRACTION 08E TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/14/89 Category

Batch# 5 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	104.	% R	0.1
Hexavalent Chromium	7196	101.	% R	0.01
Oil and Grease	413.1	NA	mg/L	5
pH	9040	NA	pH	NA
Total Dissolved Solids	160.1	NA	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results By Sample

SAMPLE ID 1042-52-1 FRACTION 01B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/13/89 Category

Batch# 5 Location Sampled Chromate Red. Til Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.4		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.018		0.005	100.	1.
Chromium	ND		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.29		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	18.1		[illegible]	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.5	2,400.	24.
Zinc	0.24		0.05	5,000.	250.
Arsenic	0.054	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

eceived ... 6/89

Results by ... ple

AMPLE ID 1042-52-1 FRACTION 01A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/13/89 Category

atch# 5 Location Sampled Chromate Red Til Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	27	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	7.86	pH	NA
Total Dissolved Solids	160.1	8300	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 1/16/89

FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

01B	I	3050	01C	I	3060	01B	I	AS_SED	HG_P
02B	I	3050	02C	I	3060	02B	I	AS_SED	HG_P
03A	I	3050	3060		AS_SED	HG_P			
04B	I	3050	04C	I	3060	04B	I	AS_SED	HG_P
05A	I	3050	3060		AS_SED	HG_P			
05B	I	3050	AS_SED		HG_P				
05C	I	3050	3060		AS_SED	HG_P			
06B	I	3050	06C	I	3060	06B	I	AS_SED	HG_P
07A	I	3050	3060		AS_SED	HG_P			
08B	I	3050	08C	I	3060	08B	I	AS_SED	HG_P
08D	I	3060							
08E	I	3060							
09A	I	3050	3060		AS_SED	HG_P			
09B	I	3050	AS_SED		HG_P				

MITTELHAUSER corporation

23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1042

PROJECT NAME: Topock Closure

SAMPLED BY: (PRINTED AND SIGNATURE) Orlando Mauricio

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	F, PH, TDS	[illegible]	Oil/Grease	Metals	4a, 5, 7, 9	4a, 5, 7	PRESERVATIVE	REMARKS
1042-43-6	11-15-89	815	Water	PD-1	3	✓		✓	✓				
1042-43-7	11-15-89	1008	Water	PF-1	3	✓		✓	✓				
1042-52-2	11-15-89	300	Water	CRT-2	3	✓		✓	✓				
1042-52-4	11-15-89	915	Water	TS-1	3	✓		✓	✓				
1042-55-1	11-15-89	1135	Water	PI-2	3	✓		✓	✓				
1042-52-5	11-15-89	1015	Soil	CRT-4	1					✓			
1042-52-6	11-15-89	1020	Soil	CRT-4	1					✓			
1042-52-7	11-15-89	1025	Soil	CRT-4	1					✓			
1042-52-10	11-15-89	1051	Soil	TS-3	1					✓			
1042-52-9	11-15-89	1035	Conc.	TS-2	1						✓		
1042-52-3	11-15-89	730	Conc	CRT-3	1						✓		

RELINQUISHED BY: (SIGNATURE) Orlando J. Mauricio	DATE 11/15/89	TIME 3:25	RECEIVED BY: (SIGNATURE) Greyhound, Needles CA	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 11 / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 21	LABORATORY: TMA
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: S. Kirby	LABORATORY PHONE NUMBER: (818) 357-3247
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET (SARS) ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION; CANARY, LABORATORY; PINK, CLIENT; GOLD, PROJECT FILE

REMARKS: Call Dave Dorn for Questions 619-326-2061 Batch 6

Received 11/16/89 02/05/90 [illegible]:21:52

REPORT TO Mittelhauser Corporation
23272 Mill Creek Dr., Ste 300
Laguna Hills, CA 92653

ATTEN David Dorn

CLIENT MITTELHAUSER SAMPLES 12
COMPANY Mittelhauser Corporation
FACILITY Topock

WORK ID 1042/Batch #6
TAKEN Mittelhauser Staff
TRANS Greyhound
TYPE Liquid/Soil
P.O. # Verbal by Dave Dorn
INV. # 612000

PREPARED BY Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN Ms. Carole Harris
PHONE 818-357-3247

Robert MAZEREK
CERTIFIED BY

CONTACT SAK

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

PG&E
Topock Compressor Station
Closure Plan

Previously Reported on 12/01/89.
First Reported on 12/01/89.

SAMPLE IDENTIFICATION

01	1042-43-6
01	1042-43-6 DUPLICATE
01	1042-43-6 SPIKE
02	1042-43-7
03	1042-52-2
04	1042-52-4
05	1042-55-1
05	1042-55-1 DUPLICATE
05	1042-55-1 SPIKE
06	1042-52-5
07	1042-52-6
08	1042-52-7
09	1042-52-10
10	1042-52-9
11	1042-52-8
12	Blank Spike

TEST CODES and NAMES used on this report

COND S	Spec. Conductance - Soil
CRHEXS	Hexavalent Chromium
CRHEX	Hexavalent Chromium
FLUORI	Fluoride (Direct in Water)
F S	Fluoride in Solid (distil.)
F W	Fluoride in Water (distil.)
MITICL	CA Title 22 Total Metals
MITICS	CA Title 22 Total Metals
MITWCS	Solid Matrix
MITWCW	Liquid Matrix
OIL GR	Oil and Grease - gravimet.
PH	pH of liquids.
TDS	Total Dissolved Solids

4

Received '16/89

Results by Sample

SAMPLE ID 1042-43-6 DUPLICATE FRACTION 01D TEST CODE MITWCW NAME Liquid Matrix
Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled PD - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.8	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	NA	mg/L	5
pH	9040	NA	pH	NA
Total Dissolved Solids	160.1	1200	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 16/89

TMA Inc. REPORT Work Order # 07 1 00

Results by Sample

SAMPLE ID 1042-43-6 FRACTION 01B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled PD - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	ND		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	0.07		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.07		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.1		0.1	3,500.	350.
Nickel	0.06		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.11		0.05	5,000.	250.
Arsenic	0.011	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

RECEIVED 11/10/07

Results by Sample

SAMPLE ID 1042-43-6 FRACTION 01A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled PD - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.7	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	8.26	pH	NA
Total Dissolved Solids	160.1	1270	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results by Sample

SAMPLE ID 1042-43-6 SPIKE FRACTION 01E TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	104.	%R	0.1
Hexavalent Chromium	7196	110.	%R	0.01
Oil and Grease	413.1	NA	mg/L	5
pH	9040	NA	pH	NA
Total Dissolved Solids	160.1	NA	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89 Results by Sample Work Order # 89-1[illegible]08

SAMPLE ID 1042-43-7 FRACTION 02B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled PF - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.35		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	0.40		0.05	2,500.	560.
Cobalt	ND		0.00[illegible]	8,000.	80.
Copper	0.07		0.02	2,500.	25.
Lead	0.08	0.05		1,000.	5.
Molybdenum	1.7		0.[illegible]	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.005	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.[illegible]	2,400.	24.
Zinc	0.17		0.05	5,000.	250.
Arsenic	0.019	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

TMA Inc. REPORT Work Order # 89-11[illegible]

eceived: [illegible]/16/89 Results by Sample

AMPLE ID 1042-43-7 FRACTION 02A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/15/89 Category

atch# 6 Location Sampled PF - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.7	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	7	mg/L	5
pH	9040	7.36	pH	NA
Total Dissolved Solids	160.1	1050	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89 Results by Sample Work Order # 87-1[illegible]08

SAMPLE ID 1042-52-2 FRACTION 03B TEST CODE MITICL NAME CA Title 22 Total Metals
Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	8.0		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.057		0.005	100.	1.
Chromium	5.2		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.68		0.02	2,500.	25.
Lead	0.50	0.05		1,000.	5.
Molybdenum	0.4		0.[illegible]	3,500.	350.
Nickel	ND		0.05	2,000.	20.
Silver	ND		0.02	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.[illegible]	2,400.	24.
Zinc	1.5		0.03	5,000.	250.
Arsenic	0.055	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/16/89

Results by Sample

SAMPLE ID 1042-52-2 FRACTION 03A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	5.1	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	19	mg/L	5
pH	9040	8.07	pH	NA
Total Dissolved Solids	160.1	1170	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89 Results By Sample Work Order # 89-1, 08

SAMPLE ID 1042-52-3 FRACTION 11A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 3 Depth Sampled 0 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg.	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	230.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	42.		3.	2,500.	560.
Cobalt	9.		3	8,000.	80.
Copper	18.		3	2,500.	25.
Lead	10.			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	21.			2,000.	20.
Silver	ND			500.	5.
Thallium	ND			700.	7.
Vanadium	23.		1	2,400.	24.
Zinc	47.		3	5,000.	250.
Arsenic	7.6	0.3		500.	5.
Mercury	0.021	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 1/16/89 Results by Sample

SAMPLE ID 1042-52-3 FRACTION 11A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 3 Depth Sampled 0 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	450.	mg/Kg	1
Hexavalent Chromium	7196	6.	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	11.44	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results By Sample

Work Order # 89-1[illegible]08

SAMPLE ID 1042-52-4

FRACTION 04B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89

Category

Batch# 6

Location Sampled TS - 1

Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121

Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	3.3		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.77		0.005	100.	1.
Chromium	3.7		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.59		0.02	2,500.	25.
Lead	2.65	0.05		1,000.	5.
Molybdenum	0.3		0.1	3,500.	350.
Nickel	0.11		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	1.4		0.05	5,000.	250.
Arsenic	0.035	0.005		500.	5.
Mercury	0.006	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received [illegible]/16/89 Results by Sample

SAMPLE ID 1042-52-4 FRACTION 04A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled TS - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	5.2	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	110.	mg/L	5
pH	9040	7.99	pH	NA
Total Dissolved Solids	160.1	1090.	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89 Results by Sample Work Order # 8971/ 08

SAMPLE ID 1042-52-5 FRACTION 06A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 4 Depth Sampled 6 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	165.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	120.		3.	2,500.	560.
Cobalt	10.		3.	8,000.	80.
Copper	14.		3.	2,500.	25.
Lead	6.			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	19.		3.	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5.		700.	7.
Vanadium	25.		1.	2,400.	24.
Zinc	96.		3.	5,000.	250.
Arsenic	4.3	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 11/16/89

Results [illegible] Sample

SAMPLE ID 1042-52-5 FRACTION 06A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 4 Depth Sampled 6 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	170.	umho/cm	NA
Fluoride	340.2	380.	mg/Kg	1
Hexavalent Chromium	7196	1.	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.42	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Receive 11/16/89 Results Sample

SAMPLE ID 1042-52-6 FRACTION 07A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CKT - 4 Depth Sampled 12 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	103.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	23.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	7.		3.	2,500.	25.
Lead	2.	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	14.		3.	2,000.	20.
Silver	ND		15.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	23.		1.	2,400.	24.
Zinc	47.		3.	5,000.	250.
Arsenic	1.7	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: /16/89

TMA INC. REPORT

Results by Sample

Work Order # 89-1 08

SAMPLE ID 1042-52-6

FRACTION 07A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 4 Depth Sampled 12 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	65.	umho/cm	NA
Fluoride	340.2	490.	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	9.03	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results by Sample

Work Order # 89-1[illegible]08

SAMPLE ID 1042-52-7 FRACTION 08A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 4 Depth Sampled 18 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	168.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	21.		3.	2,500.	560.
Cobalt	10.		3.	8,000.	80.
Copper	8.		3.	2,500.	25.
Lead	3.			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	18.			2,000.	20.
Silver	ND			500.	5.
Thallium	ND			700.	
Vanadium	24.		1.	2,400.	24.
Zinc	49.		3.	5,000.	250.
Arsenic	2.5	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received [illegible]/16/89 Results by Sample

SAMPLE ID 1042-52-7 FRACTION 08A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled CRT - 4 Depth Sampled 18 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	45.	umho/cm	NA
Fluoride	340.2	400.	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	9.52	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/16/89 Results by Sample Work Order # 89-1[illegible]08

SAMPLE ID 1042-52-9 FRACTION 10A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled TS - 2 Depth Sampled 0 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	96.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	80.		3.	2,500.	560.
Cobalt	5.		3.	8,000.	80.
Copper	9.		3.	2,500.	25.
Lead	9.			1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	10.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	18.		1.	2,400.	24.
Zinc	44.		3.	5,000.	250.
Arsenic	8.2	0.3		500.	5.
Mercury	0.179	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Page 27 TMA Inc. REPORT Work Order # 89-17 '08

Received 11/16/89 Results by Sample

SAMPLE ID 1042-52-9 FRACTION 10A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled TS - 2 Depth Sampled 0 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	96.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	30.		3.	2,500.	560.
Cobalt	5.		3.	8,000.	80.
Copper	9.		3.	2,500.	25.
Lead	9.	1.		1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	10.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	18.		1.	2,400.	24.
Zinc	44.		3.	5,000.	250.
Arsenic	8.2	0.3		500.	5.
Mercury	0.179	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 11/16/89

Results by Sample

Work Order # 87-17 08

SAMPLE ID 1042-52-9 FRACTION 10A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled TS - 2 Depth Sampled 0 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	340.	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	12.4	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/16/89

Results by Sample

SAMPLE ID 1042-52-10 FRACTION 09A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled TS - 3 Depth Sampled 6 - 12 In.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500	15
Barium	100		1	10,000	100
Beryllium	1		1	75	0.75
Cadmium	ND		0.5	100	1
Chromium	20		3	2,500	560
Cobalt	11		3	8,000	80
Copper	8		3	2,500	25
Lead	4			1,000	5
Molybdenum	ND			3,500	350
Nickel	16			2,000	20
Silver	ND			500	5
Thallium	ND			700	
Vanadium	23		1	2,400	24
Zinc	54		3	5,000	250
Arsenic	2.1	0.3		500	5
Mercury	ND	0.002		100	1
Selenium	ND	0.5		20	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 11/16/89

Results by Sample

SAMPLE ID 1042-52-10 FRACTION 09A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled TS - 3 Depth Sampled 6 to 12 In

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	87	Umho/cm	NA
Fluoride	340.2	400	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	9.00	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA - Not analyzed / Not applicable
ND - Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. Environmental Agency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract.

Page 12 TMA INC. REPORT Work Order # 89-1[illegible]08

Received [illegible]/16/89 Results By Sample

SAMPLE ID 1042-55-1 FRACTION 05B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled PI - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500	15
Barium	0.2		0.1	10,000	100
Beryllium	ND		0.005	75	0.75
Cadmium	0.032		0.005	100	1
Chromium	0.18		0.05	2,500	560
Cobalt	ND		0.0[illegible]	8,000	80
Copper	0.04		0.02	2,500	25
Lead	0.07	0.05		1,000	5
Molybdenum	0.1		0.1	3,500	350
Nickel	ND		0.04	2,000	20
Silver	ND		0.05	500	5
Thallium	ND	0.1		700	7
Vanadium	ND		0.[illegible]	2,400	24
Zinc	0.14		0.05	5,000	250
Arsenic	0.011	0.005		500	5
Mercury	ND	0.001		100	1
Selenium	ND	0.01		20	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/16/89 Results by Sample

SAMPLE ID 1042-55-1 FRACTION 05A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled PI - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.5	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	8.23	pH	NA
Total Dissolved Solids	160.1	960	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received /16/89 Results by Sample

SAMPLE ID 1042-55-1 DUPLICATE FRACTION 05D TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled PI - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.107		0.005	100.	1.
Chromium	0.17		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.04		0.02	2,500.	25.
Lead	0.07	0.05		1,000.	5.
Molybdenum	0.1		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.18		0.05	5,000.	250.
Arsenic	0.011	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/16/89

Results by Sample

SAMPLE ID 1042-55-1 SPIKE FRACTION 05E TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 6 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	% Rec.	AAS	ICP	TTLC	STLC
Antimony	105		0.2	500	15
Barium	105		0.1	10,000	100
Beryllium	104 * **		0.005	75	0.75
Cadmium	100 **		0.005	100	1
Chromium	103		0.05	2,500	560
Cobalt	105		0.05	8,000	80
Copper	105		0.05	2,500	25
Lead	103	0.05		1,000	5
Molybdenum	109		0.05	3,500	350
Nickel	105		0.05	2,000	20
Silver	0			500	5
Thallium	105			700	7
Vanadium	101		0.05	2,400	24
Zinc	100		0.05	5,000	250
Arsenic	111 **	0.005		500	5
Mercury	120 * **	0.001		100	1
Selenium	80 * **	0.01		20	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

TMA Inc. REPORT Work Order # 89-1 08

Received /16/89

Results by Sample

SAMPLE ID Blank Spike FRACTION 12A TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected not specified Category 2

Batch# 6 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	% Rec.		AAS	ICP	TTLC	STLC
Antimony	104.			0.2	500.	15.
Barium	103.			0.1	10,000.	100.
Beryllium	102.	* **		0.005	75.	0.75
Cadmium	99.	**		0.005	100.	1.
Chromium	103.			0.05	2,500.	560.
Cobalt	102.			0.05	8,000.	80.
Copper	103.			0.02	2,500.	25.
Lead	103.		0.08		1,000.	5.
Molybdenum	107.			0.1	3,500.	350.
Nickel	102.			0.04	2,000.	20.
Silver	90.			0.05	500.	5.
Thallium	101.	**	0.1		700.	7.
Vanadium	99.			0.2	2,400.	24.
Zinc	99.			0.05	5,000.	250.
Arsenic	113.	**	0.005		500.	5.
Mercury	117.	* **	0.001		100.	1.
Selenium	87.	* **	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/16/89

NonReported Work

FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

01B	I	3050	01C	I	3060	01B	I	AS_SED	HG_P
01D	I	3060							
01E	I	3060							
02B	I	3050	02C	I	3060	02B	I	AS_SED	HG_P
03B	I	3050	03C	I	3060	03B	I	AS_SED	HG_P
04B	I	3050	04C	I	3060	04B	I	AS_SED	HG_P
05B	I	3050	05C	I	3060	05B	I	AS_SED	HG_P
06A	I	3050	3060		AS_SED	HG_P			
07A	I	3050	3060		AS_SED	HG_P			
08A	I	3050	3060		AS_SED	HG_P			
07A	I	3050	3060		AS_SED	HG_P			
10A	I	3050	3060		AS_SED	HG_P			
11A	I	3050	3060		AS_SED	HG_P			
12A	I	3050	AS_SED		HG_P				

MITTELHAUSER Corporation

23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 1042

PROJECT NAME: Topock Closure

SAMPLED BY: (PRINTED AND SIGNATURE) Orlando Mauricio [signature]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 1, 4a, 5, 6, 8	Oil & Grease	4a, 5, 7, 9	Modified 8015 (diesel)			PRESERVATIVE	REMARKS
1042-43-8	11/16/89	0820	Water	PF-2	3	✓							
1042-55-3	11/16/89	1419	Water	PI-1	3	✓							
1042-51-7	11/16/89	1158	Water	PA-1	3	✓							
1042-OWS-1	11/15/89	0845	Water	New OWSS - Inlet	1		✓					HCl	
1042-OWS-2	11/15/89	0845	Water	" " Outlet	1		✓					HCl	
1042-51-6	11/15/89	1400	Sludge	TG-2	1			✓					
1042-55-2	11/16/89	1430	Conc	OWSS - Pad	1				✓				
1042-55-4	11/17/89	0745	Soil	PI-1	1				✓				Depth 6 Inches
1042-55-5	11/17/89	0835	Conc	OWSS	1				✓				
1042-55-6	11/17/89	1057	Soil	PI-1	1				✓				Depth 6 Inches
1042-55-7	11/17/89	1317	Soil	OWSS - Pad	1				✓				Depth 1.5 Ft.
1042-55-8	11/17/89	1403	Soil	OWSS - Pad	1				✓				Depth 1.5 Ft.
1042-55-9	11/17/89	1417	Soil	OWSS	1				✓				Depth 1.0 Ft.
1042-51-8	11/17/89	0800	Water	PA-2	3	✓							
1042-43-10	11/17/89	1340	Water	PF-5	3	✓							
1042-43-9	11/17/89	1115	Water	PD-2	3	✓							

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)		
Orlando J. Mauricio	11-17-89	3:45	Greyhound, Needles, CA	TOTAL NO. OF SAMPLES (THIS SHIPMENT): 16 TOTAL NO. OF CONTAINERS (THIS SHIPMENT): 28	LABORATORY: TMA
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: S. Kirby	LABORATORY PHONE NUMBER: (818) 357-3247
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
PINK, CLIENT
GOLD, PROJECT FILE

REMARKS: Call Dave Dorn if there are Questions (619)-326-2061 or (714) 472-2444

BATCH 7

Receive 11/18/89 02/05/90 22:00

REPORT TO: Mittelhauser Corporation
23272 Mill Creek Dr. Ste 300
Laguna Hills, CA 92653

ATTEN: David Dorn

CLIENT: MITTELHAUSER SAMPLES: 17
COMPANY: Mittelhauser Corporation
FACILITY: Topock

WORK ID: 1042/batch# 7
TAKEN: Mittelhauser Staff
TRANS: Greyhound
TYPE: Liquid/Soil
P.O. #: Verbal by Dave Dorn
INV. #: 612001

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

Robert Mazebek
CERTIFIED BY

CONTACT: SAK

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

PG&E
Topock Compressor Station
Closure Plan

Previously Reported on 12/06/89
First Reported on 12/06/89

SAMPLE IDENTIFICATION

01	1042-43-8
01	1042-43-8 Bottle C
01	1042-43-8 DUPLICATE
01	1042-43-8 SPIKE
02	1042-55-3
02	1042-55-3 Bottle C
03	1042-51-7
03	1042-51-7 Bottle C
04	1042-OWS-1
05	1042-OWS-2
06	1042-51-6
06	1042-51-6 DUPLICATE
07	1042-55-2 OWSS-PAD
08	1042-55-4 PI-1
09	1042-55-5 OWSS
10	1042-55-6 PI-1
11	1042-55-7 OWSS-PAD
12	1042-55-8 OWSS-PAD
13	1042-55-9 OWSS
14	1042-51-8

TEST CODES and NAMES used on this report

[illegible]	[illegible] Hyd[illegible]bons
[illegible]	S[illegible] C[illegible]tan[illegible] Soil
[illegible]	He[illegible] Chr[illegible]
[illegible]	He[illegible] Chr[illegible]
FLUORI	Fl[illegible] (Dire[illegible] Water)
F-S	Fluoride in Soil (distil)
F-W	Fluoride in Water (distil)
MITICL	CA Title 22 Total Metals
MITICS	CA Title 22 Total Metals
MITWCS	Solid Matrix
MITWCW	Liquid Matrix
OIL GR	Oil and Grease - gravimet
PH	pH of liquids
PH SOL	pH of Solids
TDS	Total Dissolved Solids

Received: 1/18/89 02/05/90 08:25 Work Not Complete

SAMPLE IDENTIFICATION

14 1042-51-8
15 1042-43-10
15 1042-43-9
15 1042-43-10 DUPLICATE
15 1042-43-10 SPIKE
16 1042-43-9
17 Blank Spike

Received 11/18/89 Results by Sample

SAMPLE ID 1042-43-8. FRACTION 01B TEST CODE MITICL NAME CA Title 22 Total Metals
Date & Time Collected 11/16/89 Category

Batch# 7 Location Sampled PF - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.3		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.018		0.005	100.	1.
Chromium	0.61		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.04		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	4.1		0.[illegible]	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.005	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.02	2,400.	24.
Zinc	3.90		0.05	5,000.	250.
Arsenic	0.011	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/18/89

Results by Sample

SAMPLE ID 1042-43-8

FRACTION 01A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/16/89 Category

Batch# 7 Location Sampled PF - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.4	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	7.25	pH	NA
Total Dissolved Solids	160.1	1300	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/18/89 Results by Sample

SAMPLE ID 1042-43-8 DUPLICATE FRACTION 01D TEST CODE MITWCW NAME Liquid Matrix
Date & Time Collected 11/16/89 Category

Batch# 7 Location Sampled PF - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.5	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	NA	mg/L	5
pH	9040	NA	pH	NA
Total Dissolved Solids	160.1	1270	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. Environment Agency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/18/89

Results by Sample

SAMPLE ID 1042-43-8 SPIKE FRACTION 01E TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/16/89 Category

Batch# 7 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	100.	%R	0.1
Hexavalent Chromium	7196	106.	%R	0.01
Oil and Grease	413.1	NA	mg/L	5
pH	9040	NA	pH	NA
Total Dissolved Solids	160.1	NA	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/18/89

Results by Sample

SAMPLE ID 1042-43-9

FRACTION 16B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled PD - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	0.35		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.05		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.2		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.02	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.61		0.05	5,000.	250.
Arsenic	0.019.	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 1/18/89

Results by Sample

SAMPLE ID 1042-43-9 FRACTION 16B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled PD - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	0.35		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.05		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.2		0.100	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.61		0.05	5,000.	250.
Arsenic	0.019	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/18/89 Results of Sample

SAMPLE ID 1042-43-9 FRACTION 16A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled PD - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	5.0	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	6.	mg/L	5
pH	9040	6.82	pH	NA
Total Dissolved Solids	160.1	1450	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 1/18/89

Results by Sample

SAMPLE ID 1042-43-10 FRACTION 15B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled PF - 5 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.018		0.005	100.	1.
Chromium	0.47		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	ND		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	1.7		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.74		0.05	5,000.	250.
Arsenic	0.013	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/18/89

Results By Sample

SAMPLE ID 1042-43-10 FRACTION 15A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled PF - 5 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	8.1	mg/L	0.1
Hexavalent Chromium	7198	ND	mg/L	0.01
Oil and Grease	413.1	330	mg/L	5
pH	9040	7.62	pH	NA
Total Dissolved Solids	160.1	1070	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/18/89

Results by Sample

SAMPLE ID 1042-43-10 DUPLICATE FRACTION 15D TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled PF - 5 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.3		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.015		0.005	100.	1.
Chromium	0.46		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	ND		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	1.7		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.58		0.05	5,000.	250.
Arsenic	0.013	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/18/89 Results by Sample Work Order # 07-1 41

SAMPLE ID 1042-43-10 SPIKE FRACTION 15E TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	% Rec.		AAS	ICP	TTLC	STLC
Antimony	102.			0.2	500.	15.
Barium	104.			0.1	10,000.	100.
Beryllium	102.	* **		0.005	75.	0.75
Cadmium	94.	**		0.005	100.	1.
Chromium	100.			0.05	2,500.	560.
Cobalt	99.			0.05	8,000.	80.
Copper	100.			0.02	2,500.	25.
Lead	100.		0.05		1,000.	5.
Molybdenum	102.			0.1	3,500.	350.
Nickel	99.			0.04	2,000.	20.
Silver	0.			0.05	500.	5.
Thallium	93.		0.1		700.	7.
Vanadium	96.			0.2	2,400.	24.
Zinc	112.			0.05	5,000.	250.
Arsenic	96.	**	0.005		500.	5.
Mercury	113.	* **	0.001		100.	1.
Selenium	880.	* **	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/18/89

Results by Sample

SAMPLE ID 1042-51-6

FRACTION 06A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/15/89 Category

Batch# 7 Location Sampled PG - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	152.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	24.7		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	3.3		3.	2,500.	25.
Lead	10.6			1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	9.6		3.	2,000.	20.
Silver	4.4		1.	500.	5.
Thallium	ND		5.	700.	7.
Vanadium	ND		1.	2,400.	24.
Zinc	92.8		3.	5,000.	250.
Arsenic	2.18	0.3		500.	5.
Mercury	0.026	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 11/18/89

Results by Sample

SAMPLE ID 1042-51-6 FRACTION 06A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/15/89 Category

Batch# 7 Location Sampled PG - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	430	umho/cm	NA
Fluoride	340.2	890	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413	NA	mg/Kg	10
pH	9045	9.00	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/18/89

Results by Sample

SAMPLE ID 1042-51-7 FRACTION 03B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/16/89 Category

Batch# 7 Location Sampled PA - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.3		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	0.14		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.10		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	4.6		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	0.06		0.05	500.	5.
Thallium	ND			700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.38		0.05	5,000.	250.
Arsenic	0.043	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/18/89

Results by Sample

SAMPLE ID 1042-51-7

FRACTION 03A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/16/89 Category

Batch# 7 Location Sampled PA - 1 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	7050	NA	umho/cm	NA
Fluoride	340.2	17.	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	280.	mg/L	5
pH	9040	7.14	pH	NA
Total Dissolved Solids	160.1	5370.	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 1/18/89

Results by Sample

SAMPLE ID 1042-51-8

FRACTION 14B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled PA - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.015		0.005	100.	1.
Chromium	ND		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	ND		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.1		0.05	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.52		0.05	5,000.	250.
Arsenic	0.014	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/18/89 Results by Sample

SAMPLE ID 1042-51-8 FRACTION 14A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/17/89 Category

Batch# 7 Location Sampled PA - 2 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	0.1	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	280.	mg/L	5
pH	9040	7.00	pH	NA
Total Dissolved Solids	160.1	1060	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 1/18/89 Results by Sample Work Order # 87-1 41

SAMPLE ID Blank Spike FRACTION 17A TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected not specified Category

Batch# 7 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	% Rec.		AAS	ICP	TTLC	STLC
Antimony	100.			0.2	500.	15.
Barium	101.			0.1	10,000.	100.
Beryllium	101.	* **		0.005	75.	0.75
Cadmium	94.	**		0.005	100.	1.
Chromium	100.			0.05	2,500.	560.
Cobalt	100.			0.05	8,000.	80.
Copper	99.			0.02	2,500.	25.
Lead	98.		0.05		1,000.	5.
Molybdenum	103.			0.1	3,500.	350.
Nickel	100.			0.04	2,000.	20.
Silver	83.			0.05	500.	5.
Thallium	96.	**	0.1		700.	7.
Vanadium	97.			0.2	2,400.	24.
Zinc	97.			0.05	5,000.	250.
Arsenic	115.	**	0.005		500.	5.
Mercury	105.	* **	0.001		100.	1.
Selenium	99.	* **	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 11/18/89 NonReported Work

FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

01B	I	3050	AS_SED	HG_P			
01C	I	3060					
01D	I	3060					
01E	I	3060					
02B	I	3050	AS_SED	HG_P			
02C	I	3060					
03B	I	3050	AS_SED	HG_P			
03C	I	3060					
06A	I	3050	3060	AS_SED	HG_P		
07A	I	OX8015					
08A	I	OX8015					
09A	I	OX8015					
10A	I	OX8015					
11A	I	OX8015					
12A	I	OX8015					
13A	I	OX8015					
14B	I	3050	14C	I	3060	14B	I AS_SED HG_P
15B	I	3050	AS_SED	HG_P			
15C	I	3060					
16B	I	3050	16C	I	3060	16B	I AS_SED HG_P

TMA/ARLI 160 Taylor Street / Monrovia, CA 91016 / (818) 357-3247 / FAX (818) 359-5036

MITTELHAUSER Corporation

23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF ___

PROJECT NUMBER: 1047

PROJECT NAME: Torrey Closure

SAMPLED BY: (PRINTED AND SIGNATURE) [illegible]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): #1	#4	#5	#6	#7	#8	PRESERVATIVE	REMARKS
1047-[illegible]	[illegible]	[illegible]	Water	[illegible]	[illegible]	X						[illegible]	[illegible]
1047-[illegible]	11/21/89	[illegible]	Water	[illegible]	[illegible]							[illegible]	[illegible]
[illegible]-24	11/21/89	0915	Water	[illegible]	[illegible]							[illegible]	[illegible]
[illegible]-43-[illegible]	[illegible]	[illegible]	Soil	[illegible]	[illegible]		X						
1047-43-14	[illegible]	[illegible]	Soil	[illegible]	[illegible]		X						[illegible]
1047-43-15	[illegible]	[illegible]	Soil	[illegible]	[illegible]		X						
1047-43-18	[illegible]	[illegible]	Soil	[illegible]	[illegible]		X						
1047-43-19	11/21/89	1125	Soil	[illegible]	[illegible]		X						[illegible]
1047-43-20	11/21/89	1140	Soil	[illegible]	[illegible]		X						
1047-43-[illegible]	11/21/89	1130	Soil	[illegible]	[illegible]		X						
1047-43-22	11/21/89	1146	Soil	[illegible]	[illegible]		X						
1047-43-[illegible]	[illegible]	1307	Soil	[illegible]	[illegible]		X						
[illegible]	11/19/89	1145	Soil	[illegible]	[illegible]		X						
1047-[illegible]	11/19/89	1315	Soil	[illegible]	[illegible]		X						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		X						

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT): [illegible] / TOTAL NO. OF CONTAINERS (THIS SHIPMENT): [illegible]	LABORATORY:
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER:
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ☐ YES ☐ NO	

DISTRIBUTION: WHITE: MITTELHAUSER CORPORATION
CANARY: LABORATORY
PINK: CLIENT
GOLD: PROJECT FILE

REMARKS: [illegible]

REPORT TO: Mittelhauser Corporation
23272 Mill Creek Dr., Ste 300
Laguna Hills, CA 92653

ATTEN: David Dorn

CLIENT: MITTELHAUSER SAMPLES 17
COMPANY: Mittelhauser Corporation
FACILITY: Topock

WORK ID: 1042/batch# 8
TAKEN: Mittelhauser Staff
TRANS: Greyhound
TYPE: Liquid/Soil
P.O. #: Verbal by Dave Dorn
INV. #: 612002

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

Robert Mazurek
CERTIFIED BY

CONTACT: SAK

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

PG&E
Topock Compressor Station
Closure Plan

Previously Reported on 01/09/90.
First Reported on 12/08/89.

SAMPLE IDENTIFICATION

01	1042-43-13
01	1042-43-13 DUPLICATE
01	1042-43-13 SPIKE
02	1042-43-17
03	1042-43-24
04	1042-43-11
04	1042-43-11 DUPLICATE
04	1042-43-11 SPIKE
05	1042-43-14
06	1042-43-15
07	1042-43-19
08	1042-43-20
09	1042-43-18
10	1042-43-21
11	1042-43-22
12	1042-43-23
13	1042-51-10
13	1042-51-10 DUPLICATE
13	1042-51-10 SPIKE
14	1042-51-6

TEST CODES and NAMES used on this report

COND S	Spec Conductance - Soil
CRHEXS	Hexavalent Chromium
CR HEX	Hexavalent Chromium
FLUORI	Fluoride (Direct in Water)
F S	Fluoride in Solid (distil.)
F W	Fluoride in Water (distil.)
MITICL	CA Title 22 Total Metals
MITICS	CA Title 22 Total Metals
MITWCS	Solid Matrix
MITWCW	Liquid Matrix
OIL GR	Oil and Grease - gravimet.
PH	pH of liquids.
PH SOL	pH of Solids
TDS	Total Dissolved Solids

Received: /22/89 Results by Sample

SAMPLE ID 1042-43-11 FRACTION 04A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PF - 6 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 71016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	265	umho/cm	NA
Fluoride	340.2	355	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.2	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/22/89

TRA INC. REPORT
02/05/90 14:34:48

Work Order # 89-1[illegible]
Work Not Complete

SAMPLE IDENTIFICATION

15 1042-52-11
16 1042-51-9
17 Blank Spike

Received: [illegible]/22/89

Results by Sample

SAMPLE ID 1042-43-11 FRACTION 04A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PF - 6 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	80.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	22.		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	3.		3.	2,500.	25.
Lead	28.5	1.		1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	8.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	8.		1.	2,400.	24.
Zinc	51.		3.	5,000.	250.
Arsenic	1.7	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received: 11/22/89 Results by Sample

SAMPLE ID 1042-43-11 DUPLICATE FRACTION 04B TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PF - 6 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	263	umho/cm	NA
Fluoride	340.2	334	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.2	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received [illegible]/22/89

Results by Sample

SAMPLE ID 1042-43-11 SPIKE FRACTION 04C TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	98	% R	1
Hexavalent Chromium	7198	103	% R	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	NA	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89 Results by Sample

SAMPLE ID 1042-43-13 FRACTION 01B TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 8 Location Sampled PF - 7 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium*	ND		0.005	75.	0.75
Cadmium*	ND		0.005	100.	1.
Chromium	ND		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.07		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.2		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.34		0.05	5,000.	250.
Arsenic	ND	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AAS Detection Limit, mg/L

Received: 1/22/89 Results by Sample

SAMPLE ID 1042-43-13 FRACTION 01A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/17/89 Category

Batch# 8 Location Sampled PF - 7 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.0	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	7.8	pH	NA
Total Dissolved Solids	160.1	1,014	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89 Results by Sample

SAMPLE ID 1042-43-13 DUPLICATE FRACTION 01D TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 8 Location Sampled PF - 7 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California -- Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	ND		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.02		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.2		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.25		0.05	5,000.	250.
Arsenic	ND	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received [illegible]/22/89 Results by Sample

SAMPLE ID 1042-43-13 DUPLICATE FRACTION 01D TEST CODE MITWCW NAME Liquid Matrix
Date & Time Collected 11/17/89 Category

Batch# 8 Location Sampled PF - 7 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.0	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	NA	mg/L	5
pH	9040	NA	pH	NA
Total Dissolved Solids	160	1,018	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89

Results by Sample

SAMPLE ID 1042-43-13 SPIKE FRACTION 01E TEST CODE MITICL NAME CA Title 22 Total Metals

Date & Time Collected 11/17/89 Category

Batch# 8 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	% Rec.		AAS	ICP	TTLC	STLC
Antimony	96.			0.2	500.	15.
Barium	100.			0.1	10,000.	100.
Beryllium	101.	* **		0.005	75.	0.75
Cadmium	71.	**		0.005	100.	1.
Chromium	101.			0.05	2,500.	560.
Cobalt	100.			0.05	8,000.	80.
Copper	100.			0.02	2,500.	25.
Lead	99.		0.05		1,000.	5.
Molybdenum	102.			0.[illegible]	3,500.	350.
Nickel	99.			0.04	2,000.	20.
Silver	0.			0.05	500.	5.
Thallium	89.	**	0.1		700.	7.
Vanadium	97.			0.2	2,400.	24.
Zinc	93.			0.05	5,000.	250.
Arsenic	108.	**	0.005		500.	5.
Mercury	130.	* **	0.001		100.	1.
Selenium	92.	* **	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received 1/22/89 Results by Sample

SAMPLE ID 1042-43-13 SPIKE FRACTION 01E TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/17/89 Category

Batch# 8 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	101	% R	0.1
Hexavalent Chromium	7196	94	% R	0.01
Oil and Grease	413.1	NA	mg/L	5
pH	9040	NA	pH	NA
Total Dissolved Solids	160.1	NA	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89

Results by Sample

SAMPLE ID 1042-43-14 FRACTION 05A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PH - 6 Depth Sampled 1.5 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	66.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	45.		3.	2,500.	560.
Cobalt	9.		3.	8,000.	80.
Copper	13.		3.	2,500.	25.
Lead	32.2			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	32.			2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5		700.	7.
Vanadium	29.		1	2,400.	24.
Zinc	58.		3	5,000.	250.
Arsenic	1.7	0.3		500.	5.
Mercury	0.045	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received [illegible]/22/89

Results by Sample

SAMPLE ID 1042-43-14 FRACTION 05A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PH - 6 Depth Sampled 1.5 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	412	umho/cm	NA
Fluoride	340.2	506	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	10.3	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/22/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-11[illegible]95

SAMPLE ID 1042-43-15 FRACTION 06A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PH - 7 Depth Sampled 5 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	149.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	52.		3.	2,500.	560.
Cobalt	7.		3.	8,000.	80.
Copper	10.		3.	2,500.	25.
Lead	9.6		1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	25.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND		5.	700.	7.
Vanadium	23.		1.	2,400.	24.
Zinc	118.		3.	5,000.	250.
Arsenic	1.7	0.3		500.	5.
Mercury	0.034	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received [illegible]/22/89

Results by Sample

SAMPLE ID 1042-43-15 FRACTION 06A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PH - 7 Depth Sampled 5 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	380	umho/cm	NA
Fluoride	340.2	640	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	9.6	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-11-55

SAMPLE ID 1042-43-17 FRACTION 02B TEST CODE MITICL NAME CA Title 22 Total Metals
Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PD - 3 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 71016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	0.11		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	0.06		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	0.1		0.1	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	0.1	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.37		0.05	5,000.	250.
Arsenic	ND	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received /22/89

TMA Inc. REPORT Work Order # 07-1 33

Results by Sample

SAMPLE ID 1042-43-17 FRACTION 02A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PD - 3 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	3.8	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	7.1	pH	NA
Total Dissolved Solids	160.1	1,064	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89

TMA Inc. REPORT
Results by Sample

Work Order # 89-11 95

SAMPLE ID 1042-43-18 FRACTION 09A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PH - 8 Depth Sampled 3 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	83.		1.	10,000.	100.
Beryllium	1.		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	37.		3.	2,500.	560.
Cobalt	6.		3.	8,000.	80.
Copper	16.		3.	2,500.	25.
Lead	6.1			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	25.		3.	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5.		700.	7.
Vanadium	42.		1.	2,400.	24.
Zinc	41.		3.	5,000.	250.
Arsenic	2.1	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

eceived: 22/89

Results by Sample

AMPLE ID 1042-43-18 FRACTION 09A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/18/89 Category

atch# 8 Location Sampled PH - 8 Depth Sampled 3 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	449	umho/cm	NA
Fluoride	340.2	584	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	10.2	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/22/89

Results by Sample

SAMPLE ID 1042-43-19 FRACTION 07A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/20/89 Category

Batch# 8 Location Sampled PH - 9 Depth Sampled 3 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	56.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	34.		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	15.		3.	2,500.	25.
Lead	6.4			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	24.		3.	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5.		700.	7.
Vanadium	40.		1.	2,400.	24.
Zinc	61.		3.	5,000.	250.
Arsenic	1.7	0.3		500.	5.
Mercury	0.011	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

eceived 22/89

Results by Sample

AMPLE ID 1042-43-19 FRACTION 07A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/20/89 Category

atch# 8 Location Sampled PH - 9 Depth Sampled 3 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	368	umho/cm	NA
Fluoride	340.2	851	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	9.7	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/22/89

Results by Sample

SAMPLE ID 1042-43-20 FRACTION 08A TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/20/89 Category

Batch# 8 Location Sampled PH - 10 Depth Sampled 2 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	113.		1.	10,000.	100.
Beryllium	1.5		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	26.		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	26.		3.	2,500.	25.
Lead	20.			1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	18.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND			700.	7.
Vanadium	25.		1.	2,400.	24.
Zinc	296.		3.	5,000.	250.
Arsenic	1.4	0.3		500.	5.
Mercury	0.075	0.002		100.	1.
Selenium	0.6	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

eceived: 22/89

Results by Sample

AMPLE ID 1042-43-20 FRACTION 08A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/20/89 Category

atch# 8 Location Sampled PH - 10 Depth Sampled 2 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	418	Umho/cm	NA
Fluoride	340.2	518	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413	NA	mg/Kg	10
pH	9045	10.2	pH	NA
Total Dissolved Solids	160	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/22/89

Results by Sample

SAMPLE ID 1042-43-21 FRACTION 10A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled PH - 11 Depth Sampled 4 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	111.		1.	10,000.	100.
Beryllium	1.		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	26.		3.	2,500.	560.
Cobalt	5.		3.	8,000.	80.
Copper	12.		3.	2,500.	25.
Lead	8.0			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	18.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND			700.	7.
Vanadium	33.		1.	2,400.	24.
Zinc	47.		3.	5,000.	250.
Arsenic	1.7	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received ... /22/89

TMA Inc. REPORT

Results by Sample

SAMPLE ID 1042-43-21 FRACTION 10A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled PH - 11 Depth Sampled 4 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	225	umho/cm	NA
Fluoride	340.2	617	mg/Kg	1
Hexavalent Chromium	7198	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.6	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/22/89

TMA INC. REPORT

Results by Sample

SAMPLE ID 1042-43-22

FRACTION 11A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled PH - 12 Depth Sampled 4 Ft.

DOHS Certification No. 121
Date Reported 02/05/90

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	90.		1.	10,000.	100.
Beryllium	1.		1.	75.	0.75
Cadmium	ND		0.5	100	1.
Chromium	28.		3.	2,500	560
Cobalt	4.		3.	8,000	80
Copper	12.		3.	2,500	25
Lead	8.0		1.	1,000	5
Molybdenum	ND			3,500	350.
Nickel	19.			2,000	20
Silver	ND			500	5
Thallium	ND			700.	7
Vanadium	35.			2,400.	24
Zinc	44.		3	5,000.	250.
Arsenic	2.2	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received /22/89

TMA INC. REPORT

Results by Sample

SAMPLE ID 1042-43-22 FRACTION 11A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled PH - 12 Depth Sampled 4 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	303	umho/cm	NA
Fluoride	340.2	629	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.29	pH	NA
Total Dissolved Solids	160	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/22/89

TMA Inc. REPORT
Results by Sample

Work Order # 07-[illegible]

SAMPLE ID 1042-43-23

FRACTION 12A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled PH - 13 Depth Sampled 6 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	216.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	37.		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	8.		3.	2,500.	25.
Lead	12.5		1.	1,000.	5.
Molybdenum	ND		1.	3,500.	350.
Nickel	9.		3.	2,000.	20.
Silver	ND		1.	500.	5.
Thallium	ND	5.		700.	7.
Vanadium	24.		1.	2,400.	24.
Zinc	102.		3.	5,000.	250.
Arsenic	2.5	0.3		500.	5.
Mercury	0.009	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 22/89

Results by Sample

SAMPLE ID 1042-43-23 FRACTION 12A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled PH - 13 Depth Sampled 6 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	328	umho/cm	NA
Fluoride	340.2	670	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.5	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89

TMA INC. REPORT
Results by Sample

SAMPLE ID 1042-43-24 FRACTION 03B TEST CODE MITICL NAME CA Title 22 Total Metals
Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled PH - 14 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	0.2		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	ND		0.005	100.	1.
Chromium	0.05		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	ND		0.02	2,500.	25.
Lead	ND	0.05		1,000.	5.
Molybdenum	ND		0.	3,500.	350.
Nickel	ND		0.04	2,000.	20.
Silver	ND		0.02	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	0.18		0.05	5,000.	250.
Arsenic	ND	0.005		500.	5.
Mercury	ND	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received [illegible]/22/89

Results by Sample

SAMPLE ID 1042-43-24 FRACTION 03A TEST CODE MITWCW NAME Liquid Matrix

Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled PH - 14 Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	4.1	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	ND	mg/L	5
pH	9040	8.7	pH	NA
Total Dissolved Solids	160.1	1,242	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. Environment Agency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received: 11/22/89

TMA INC. REPORT
Results by Sample

WORK ORDER # 07 1. 90

SAMPLE ID 1042-51-9

FRACTION 16A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PF - 9 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	92.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	12.		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	7.		3.	2,500.	25.
Lead	9.0			1,000.	5.
Molybdenum	6.			3,500.	350.
Nickel	7.		8	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5		700.	7.
Vanadium	ND		1	2,400.	24.
Zinc	27.		3	5,000.	250.
Arsenic	1.9	0.3		500.	5.
Mercury	0.007	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received /22/89

TMA INC.

Results by Sample

SAMPLE ID 1042-51-9

FRACTION 16A TEST CODE MITWCS NAME Solid Matrix
Date & Time Collected 11/18/89 Category

Batch# 8 Location Sampled PF - 8 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	98	umho/cm	NA
Fluoride	340.2	517	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.5	pH	NA
Total Dissolved Solids	160	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89

TMA INC. REPORT
Results by Sample

WORK ORDER # 07 [illegible]

SAMPLE ID 1042-51-10

FRACTION 13A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/19/89 Category

Batch# 8 Location Sampled PA - 3 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	160.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	45.		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	7.		3.	2,500.	25.
Lead	14.8			1,000.	5.
Molybdenum	ND			3,500.	350.
Nickel	14.		3.	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5.		700.	7.
Vanadium	24.		1.	2,400.	24.
Zinc	87.		3.	5,000.	250.
Arsenic	2.3	0.3		500.	5.
Mercury	0.058	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received [illegible]/22/89

TMA Inc. REPORT

Results [illegible] Sample

SAMPLE ID 1042-51-10 FRACTION 13A TEST CODE MITWCS NAME Solid Matrix

Date & Time Collected 11/19/89 Category

Batch# 8 Location Sampled PA - 3 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

SOLID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	244	umho/cm	NA
Fluoride	340.2	583	mg/Kg	1
Hexavalent Chromium	7196	ND	mg/Kg	1
Oil and Grease	413.1	NA	mg/Kg	10
pH	9045	8.2	pH	NA
Total Dissolved Solids	160.1	NA	mg/Kg	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89

TMA INC. REPORT
Results by Sample

WORK ORDER # 07 [illegible]

SAMPLE ID 1042-51-10 DUPLICATE FRACTION 13B TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected 11/19/89 Category

Batch# 8 Location Sampled PA - 3 Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	mg/Kg	AAS	ICP	TTLC	STLC
Antimony	ND		0.3	500.	15.
Barium	169.		1.	10,000.	100.
Beryllium	ND		1.	75.	0.75
Cadmium	ND		0.5	100.	1.
Chromium	49.		3.	2,500.	560.
Cobalt	ND		3.	8,000.	80.
Copper	8.		3.	2,500.	25.
Lead	12.4			1,000.	5.
Molybdenum	NA			3,500.	350.
Nickel	12.		3.	2,000.	20.
Silver	ND			500.	5.
Thallium	ND	5.		700.	7.
Vanadium	25.		1.	2,400.	24.
Zinc	91.		3.	5,000.	250.
Arsenic	2.6	0.3		500.	5.
Mercury	0.036	0.002		100.	1.
Selenium	ND	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received /22/89

TMA INC. REPORT

Results by Sample

SAMPLE ID 1042-51-10 SPIKE FRACTION 13C TEST CODE MITICS NAME CA Title 22 Total Metals

Date & Time Collected 11/19/89 Category

Batch# 8 Location Sampled Percent Recovery Depth Sampled 1 Ft.

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	% Rec.		AAS	ICP	TTLC	STLC
Antimony	51. %			0.3	500.	15.
Barium	86. %			1.	10,000.	100.
Beryllium	83. %	* **		1.	75.	0.75
Cadmium	79. %	**		0.5	100.	1.
Chromium	79. %			3.	2,500.	560.
Cobalt	81. %			3.	8,000.	80.
Copper	79. %			3.	2,500.	25.
Lead	89. %		1.		1,000.	5.
Molybdenum	83. %			1.	3,500.	350.
Nickel	80. %				2,000.	20.
Silver	11. %				500.	5.
Thallium	68. %		3.		700.	7.
Vanadium	80. %			1.	2,400.	24.
Zinc	79. %			3.	5,000.	250.
Arsenic	94. %	**	0.3		500.	5.
Mercury	125. %	* **	0.002		100.	1.
Selenium	53. %	* **	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

Received 11/22/89

TMA Inc. REPORT
Results by Sample

Work Order # 0771 100

SAMPLE ID 1042-52-11 FRACTION 15B TEST CODE MITICL NAME CA Title 22 Total Metals
Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled Portable Tank Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Liquid Matrix)

	mg/L	AAS	ICP	TTLC	STLC
Antimony	ND		0.2	500.	15.
Barium	1.1		0.1	10,000.	100.
Beryllium	ND		0.005	75.	0.75
Cadmium	0.055		0.005	100.	1.
Chromium	4.6		0.05	2,500.	560.
Cobalt	ND		0.05	8,000.	80.
Copper	1.2		0.02	2,500.	25.
Lead	0.5	0.05		1,000.	5.
Molybdenum	11.		0.1	3,500.	350.
Nickel	0.05		0.04	2,000.	20.
Silver	ND		0.05	500.	5.
Thallium	ND	0.1		700.	7.
Vanadium	ND		0.2	2,400.	24.
Zinc	2.8		0.05	5,000.	250.
Arsenic	ND	0.005		500.	5.
Mercury	0.001	0.001		100.	1.
Selenium	ND	0.01		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/L
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/L
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/L

Received /22/89

Results by Sample

SAMPLE ID 1042-52-11 FRACTION 15A TEST CODE MITWCW NAME Liquid Matrix
Date & Time Collected 11/21/89 Category

Batch# 8 Location Sampled Portable Tank Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

LIQUID MATRIX

ANALYSIS	METHOD	RESULT	UNITS	DETECTION LIMIT
Electrical Conductivity	9050	NA	umho/cm	NA
Fluoride	340.2	8.1	mg/L	0.1
Hexavalent Chromium	7196	ND	mg/L	0.01
Oil and Grease	413.1	325	mg/L	5
pH	9040	6.5	pH	NA
Total Dissolved Solids	160.1	3,548	mg/L	NA

NA = Not analyzed / Not applicable
ND = Not detected at the specified limits

a Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. EnvironmentAgency, 1979.

b Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, third edition, U.S. Environmental Agency, 1987.

c Method 3060 appears in the second edition of SW-846.

d 1:10 deionized water extract

Received 11/22/89

TMA Inc. REPORT
Results by Sample

Work Order # [illegible]

SAMPLE ID Blank Spike FRACTION 17A TEST CODE MITICS NAME CA Title 22 Total Metals
Date & Time Collected not specified Category

Batch# 8 Location Sampled Percent Recovery Depth Sampled

Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

DOHS Certification No. 121
Date Reported 02/05/90

California - Title 22 Total Metals (Solid Matrix)

	% Rec.	AAS	ICP	TTLC	STLC
Antimony	97.%		0.3	500.	15.
Barium	102.%		1.	10,000.	100.
Beryllium	102.% * **		1.	75.	0.75
Cadmium	97.%		0.5	100.	1.
Chromium	102.%		3.	2,500.	560.
Cobalt	102.%		3.	8,000.	80.
Copper	101.%		3.	2,500.	25.
Lead	102.%	1.		1,000.	5.
Molybdenum	105.%			3,500.	350.
Nickel	100.%		3.	2,000.	20.
Silver	86.%		1.	500.	5.
Thallium	97.%	5.		700.	7.
Vanadium	100.%		1.	2,400.	24.
Zinc	99.%		3.	5,000.	250.
Arsenic	100.% **	0.3		500.	5.
Mercury	ND	0.002		100.	1.
Selenium	95.% * **	0.5		20.	0.2

1. TTLC = Total Threshold Limit Concentration, mg/Kg
2. STLC = STLC Limit Concentration, mg/L
3. ICP = ICP Detection Limit, mg/Kg
4. ND = not detected at detection limit
5. * = Exceeds TTLC concentration
6. ** = Exceeds 10 times STLC concentration
7. AAS = AA Detection Limit, mg/Kg

FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

01B	I	3050	01C	I	3060	01B	I	AS_SED HG_P
01D	I	3060						
01E	I	3060						
02B	I	3050	02C	I	3060	02B	I	AS_SED HG_P
03B	I	3050	03C	I	3060	03B	I	AS_SED HG_P
04A	I	3050	3060		AS_SED	HG_P		
04B	I	3050	3060		AS_SED	HG_P		
04C	I	3050	3060		AS_SED	HG_P		
05A	I	3050	3060		AS_SED	HG_P		
06A	I	3050	3060		AS_SED	HG_P		
07A	I	3050	3060		AS_SED	HG_P		
08A	I	3050	3060		AS_SED	HG_P		
09A	I	3050	3060		AS_SED	HG_P		
10A	I	3050	3060		AS_SED	HG_P		
11A	I	3050	3060		AS_SED	HG_P		
12A	I	3050	3060		AS_SED	HG_P		
13A	I	3050	3060		AS_SED	HG_P		
13B	I	3050	AS_SED		HG_P			
13C	I	3050	AS_SED		HG_P			
14A	I	3050	3060		AS_SED	HG_P		
15B	I	3050	15C	I	3060	15B	I	AS_SED HG_P
16A	I	3050	3060		AS_SED	HG_P		
17A	I	3050	AS_SED		HG_P			

INVOICE under separate cover

SAMPLE IDENTIFICATION	
01	8911099-03A/1042-43-3
02	8911099-07A/1042-43-4
03	8911099-09A/1042-43-5
04	8911155-04A/1042-43-11
05	8911155-05A/1042-43-14
06	8911155-06A/1042-43-15
07	8911155-09A/1042-43-18
08	8911155-07A/1042-43-19
09	8911155-08A/1042-43-20
10	8911155-10A/1042-43-21
11	8911155-11A/1042-43-22
12	8911155-12A/1042-43-23
13	8911099-05A/1042-51-3
14	8911141-06A/1042-51-6
15	8911155-14A/1042-51-6
16	8911155-16A/1042-51-9
17	8911155-13A/1042-51-10
18	8911108-11A/1042-52-3
19	8911108-06A/1042-52-5
20	8911108-07A/1042-52-6
21	8911108-08A/1042-52-7

TEST CODES and NAMES used on this report	
AG S	Silver - Solids
CD S	Cadmium - Solids
CR S	Chromium - Solids
HG S	Mercury - Solids
MO S	Molybdenum - Solids
PB S	Lead - Solids
SB S	Antimony - Solids
SE S	Selenium - Solid
ZN S	Zinc - Solids

TMA/ARLI *160 Taylor Street / Monrovia, CA 91016 / (818) 357-3247 / FAX (818) 359-5036*

Received: /22/90

TMA INC.

Results by Sample

SAMPLE ID 8911099-03A/1042-43-3 SAMPLE # 01 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg

SAMPLE ID 8911099-07A/1042-43-4 SAMPLE # 02 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg

SAMPLE ID 8911099-09A/1042-43-5 SAMPLE # 03 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg

SAMPLE ID 8911155-04A/1042-43-11 SAMPLE # 04 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg

Received 01/22/90

Results by Sample

SAMPLE ID 8911155-05A/1042-43-14 SAMPLE # 05 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg

SAMPLE ID 8911155-06A/1042-43-15 SAMPLE # 06 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg

SAMPLE ID 8911155-09A/1042-43-18 SAMPLE # 07 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg SE S <0.20 mg/Kg

SAMPLE ID 8911155-07A/1042-43-19 SAMPLE # 08 FRACTIONS: A
Date & Time Collected not specified Category

CD S <0.5 mg/Kg MO S <1. mg/Kg

Receive(/22/90

Results (Sample

SAMPLE ID 8911155-08A/1042-43-20 SAMPLE # 09 FRACTIONS: A

Date & Time Collected not specified Category

AG_S <1. mg/Kg CD_S <0.5 mg/Kg CR_S 26. mg/Kg MO_S <1. mg/Kg PB_S 20. mg/Kg ZN_S 296. mg/Kg

SAMPLE ID 8911155-10A/1042-43-21 SAMPLE # 10 FRACTIONS: A

Date & Time Collected not specified Category

MO_S <1. mg/Kg SE_S <0.20 mg/Kg

aAA@@ 1111111111:1004401122 S aAADD@ 10 6BAA@EGBB 0e

Date & Time Collected not specified Category

MO_S <1. mg/Kg ZN_S 44. mg/Kg

SAMPLE ID 8911155-12A/1042-43-23 SAMPLE # 12 FRACTIONS: A

Date & Time Collected not specified Category

MO_S <1. mg/Kg

SAMPLE ID 8911099-05A/1042-51-3 SAMPLE # 13 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg PB S 9.4 mg/Kg

SAMPLE ID 8911141-06A/1042-51-6 SAMPLE # 14 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg SB S <0.3 mg/Kg

SAMPLE ID 8911155-14A/1042-51-6 SAMPLE # 15 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1. mg/Kg

SAMPLE ID 8911155-16A/1042-51-9 SAMPLE # 16 FRACTIONS: A
Date & Time Collected not specified Category

MO S 6. mg/Kg

Results by Sample

SAMPLE ID 8911155-13A/1042-51-10 SAMPLE # 17 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1.
mg/Kg

SAMPLE ID 8911108-11A/1042-52-3 SAMPLE # 18 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1.
mg/Kg

SAMPLE ID 8911108-06A/1042-52-5 SAMPLE # 19 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1.
mg/Kg

SAMPLE ID 8911108-07A/1042-52-6 SAMPLE # 20 FRACTIONS: A
Date & Time Collected not specified Category

MO S <1.
mg/Kg

Received 01/22/90 Results Sample

SAMPLE ID 8911108-08A/1042-52-7 SAMPLE # 21 FRACTIONS: A
Date & Time Collected not specified Category

MO_S <1. mg/Kg

SAMPLE ID 8911108-10A/1042-52-9 SAMPLE # 22 FRACTIONS: A
Date & Time Collected not specified Category

HG_S 0.179 mg/Kg MO_S <1. mg/Kg

SAMPLE ID 8911108-09A/1042-52-10 SAMPLE # 23 FRACTIONS: A
Date & Time Collected not specified Category

MO_S <1. mg/Kg

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 1042

PROJECT NAME: Topock Closure

SAMPLED BY: (PRINTED AND SIGNATURE) Dave Dorn Dave Dorn

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a579	14a568	Modified 8015 (Diesel) Extract.	8015 Extract. Diesel			PRESERVATIVE	REMARKS
1042-43-12	11/18	755	Soil	PF-6	1	X							See SARS
1042-43-16	11/18	807	Soil	PH-7	1	X							
1042-52-8	11/15	1030	Soil	CRT-4	1	X							
1042-43-25	11/21	815	Water	PH-14	3		X						
1042-55-10	11/22	820	Soil	OWS-6	1			X	X				
1042-55-11	11/22	821	Soil	OWS-7	1			X	X				
1042-55-12	11/22	822	Soil	OWS-8	1			X	X				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	7	LABORATORY:
[signature]	11/22	13:45		TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	9	CRL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: Laurie Callan		LABORATORY PHONE NUMBER: ( )
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) Nils J. Cornejo 11/22/81 13:45	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO		

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS: Call Dave Dorn if there are questions 714-472-2444 or 619-326-2061 Batch

Enseco - CRL / South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-I-CRL
FAX: (714) 891-5917

Enseco

DHS CERTIFICATE #157

DEC 20 1989

December 13, 1989

MITTELHAUSER CORP.
23272 MILL CREEK RD., STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-001/007
Date Sampled: 15,18,21,22-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Project: (1042) TOPOCK CLOSURE

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: G-8932632-001/006 shown above.

The samples were received by CRL in a chilled state, intact and with the chain-of-custody record attached.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.

Solid samples are reported on "as received" basis.

Preliminary data were provided on December 12, 1989 at 8:40 A.M.

Please note that the following cross-reference for EPA Method 340.1/.2 analyses is as follows:

Enseco-Ventura Sample ID	Enseco-CRL Sample ID	Client's Sample ID
9332115101	G-8932632-001	1042-43-12
9332115102	G-8932632-002	1042-43-16
9332115103	G-8932632-003	1042-52-8

Paul Christ
Reviewed

Laurie Allen
Approved

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive

Enseco

Enseco - CRL / South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-I-CRL
FAX: (714) 891-5917

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-001/006
Date Sampled: 18-NOV-1989
15-NOV-1989
22-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 11-DEC-1989
29-NOV-1989
1-DEC-1989
28-NOV-1989
Sample Type: SOLID

Project: (1042) TOPOCK CLOSURE

Sample ID	TIME	TPH, Extractable mg/kg EPA 8015	Chromium, Trivalent mg/kg CALCULATED	pH units EPA 9045	Conductivity umhos/cm EPA 9050
1042-43-12	7:55 AM		26.	8.69	980.
1042-43-16	8:07 AM		27.	10.26	810.
1042-52-8	10:30 AM		43.	10.01	380.
1042-55-10	8:20 AM	ND(2)			
1042-55-11	8:21 AM	ND(1)			
1042-55-12	8:22 AM	32,000.*			
Blank		ND(1.)	ND(1.)	NA	NA

* Quantitation based on diesel. Chromatogram also indicates compounds at a boiling range higher than diesel fuel.

Paul Christi
Reviewed

Jamie Cullen
Approved

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive

Enseco

Enseco - CRL / South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-001
Date Sampled: 18-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 7-DEC-1989
1-DEC-1989
28-NOV-1989
4-DEC-1989
8-DEC-1989
Sample Type: SOLID

Project: (1042) TOPOCK CLOSURE
Sample ID: 1042-43-12

Parameter	Units	Result	Blank	Detection Limit
Antimony/TTLC (EPA 6010)	mg/kg	ND	ND	1.
Arsenic/TTLC (EPA 7061)	mg/kg	2.0	ND	0.2
Barium/TTLC (EPA 6010)	mg/kg	47.	ND	0.05
Beryllium/TTLC (EPA 6010)	mg/kg	0.12	ND	0.05
Cadmium/TTLC (EPA 6010)	mg/kg	0.11	ND	0.05
Chromium, Total/TTLC (EPA 6010)	mg/kg	26.	ND	0.05
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	ND	1
Cobalt/TTLC (EPA 6010)	mg/kg	1.8	ND	0.05
Copper/TTLC (EPA 6010)	mg/kg	6.7	ND	0.2
Lead/TTLC (EPA 6010)	mg/kg	16.	ND	0.2
Mercury/TTLC (EPA 7471)	mg/kg	ND	ND	0.02
Molybdenum/TTLC (EPA 6010)	mg/kg	0.27	ND	0.05
Nickel/TTLC (EPA 6010)	mg/kg	5.4	ND	0.05
Selenium/TTLC (EPA 7741)	mg/kg	ND	ND	0.1
Silver/TTLC (EPA 6010)	mg/kg	ND	ND	0.05
Thallium/TTLC (EPA 7840)	mg/kg	ND	ND	1
Vanadium/TTLC (EPA 6010)	mg/kg	7.3	ND	0.05
Zinc/TTLC (EPA 6010)	mg/kg	26.	ND	0.05

Paul Christi
Reviewed

Lynnie Cullen
Approved

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Enseco - CRL / South Coast
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-I-CRL
FAX: (714) 891-5917

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-002
Date Sampled: 18-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 7-DEC-1989
1-DEC-1989
28-NOV-1989
4-DEC-1989
8-DEC-1989
Sample Type: SOLID

Project: (1042) TOPOCK CLOSURE
Sample ID: 1042-43-16

Parameter	Units	Result	Blank	Detection Limit
Antimony/TTLC (EPA 6010)	mg/kg	ND	ND	1.
Arsenic/TTLC (EPA 7061)	mg/kg	1.4	ND	0.1
Barium/TTLC (EPA 6010)	mg/kg	79.	ND	0.3
Beryllium/TTLC (EPA 6010)	mg/kg	0.2	ND	0.05
Cadmium/TTLC (EPA 6010)	mg/kg	0.19	ND	0.05
Chromium, Total/TTLC (EPA 6010)	mg/kg	27.	ND	0.05
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	ND	1
Cobalt/TTLC (EPA 6010)	mg/kg	3.3	ND	0.05
Copper/TTLC (EPA 6010)	mg/kg	11.	ND	0.2
Lead/TTLC (EPA 6010)	mg/kg	2.2	ND	0.2
Mercury/TTLC (EPA 7471)	mg/kg	0.02	ND	0.02
Molybdenum/TTLC (EPA 6010)	mg/kg	0.20	ND	0.05
Nickel/TTLC (EPA 6010)	mg/kg	12.	ND	0.05
Selenium/TTLC (EPA 7741)	mg/kg	ND	ND	0.1
Silver/TTLC (EPA 6010)	mg/kg	ND	ND	0.05
Thallium/TTLC (EPA 7840)	mg/kg	ND	ND	1
Vanadium/TTLC (EPA 6010)	mg/kg	14.	ND	0.05
Zinc/TTLC (EPA 6010)	mg/kg	34.	ND	0.05

Paul Christi
Reviewed

Jamie Cullen
Approved

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-003
Date Sampled: 15-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 7-DEC-1989
1-DEC-1989
28-NOV-1989
4-DEC-1989
8-DEC-1989
Sample Type: SOLID

Project: (1042) TOPOCK CLOSURE
Sample ID: 1042-52-8

Parameter	Units	Result	Blank	Detection Limit
Antimony/TTLC (EPA 6010)	mg/kg	ND	ND	1.
Arsenic/TTLC (EPA 7061)	mg/kg	1.9	ND	0.2
Barium/TTLC (EPA 6010)	mg/kg	56.	ND	0.3
Beryllium/TTLC (EPA 6010)	mg/kg	0.1	ND	0.05
Cadmium/TTLC (EPA 6010)	mg/kg	0.20	ND	0.05
Chromium, Total/TTLC (EPA 6010)	mg/kg	43.	ND	0.05
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	ND	1
Cobalt/TTLC (EPA 6010)	mg/kg	3.0	ND	0.05
Copper/TTLC (EPA 6010)	mg/kg	8.3	ND	0.2
Lead/TTLC (EPA 6010)	mg/kg	1.9	ND	0.2
Mercury/TTLC (EPA 7471)	mg/kg	ND	ND	0.02
Molybdenum/TTLC (EPA 6010)	mg/kg	0.67	ND	0.05
Nickel/TTLC (EPA 6010)	mg/kg	8.1	ND	0.05
Selenium/TTLC (EPA 7741)	mg/kg	ND	ND	0.1
Silver/TTLC (EPA 6010)	mg/kg	ND	ND	0.05
Thallium/TTLC (EPA 7840)	mg/kg	ND	ND	1
Vanadium/TTLC (EPA 6010)	mg/kg	14.	ND	0.05
Zinc/TTLC (EPA 6010)	mg/kg	59.	ND	0.3

Paul Christ
Reviewed

Approved

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-001/006
Date Sampled: 18-NOV-1989
15-NOV-1989
22-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Sample Type: SOLID

Project: (1042) TOPOCK CLOSURE

QA/QC Summary

Date	Parameter (Method)	QC Type	Average Spike Recovery	Acceptable Range	Relative Percent Difference	Acceptable Range
7-DEC-1989	ANTIMONY (EPA 6010)	L	66	15-169	1.	95
7-DEC-1989	BARIUM (EPA 6010)	L	68	15-155	0.	95
7-DEC-1989	BERYLLIUM (EPA 6010)	L	70	18-110	0.	35
7-DEC-1989	CADMIUM (EPA 6010)	L	72	18-126	2.	95
7-DEC-1989	CHROMIUM (EPA 6010)	L	76	15-210	2.	95
7-DEC-1989	COBALT (EPA 6010)	L	72	15-132	1.	45
7-DEC-1989	COPPER (EPA 6010)	L	71	15-161	2.	77
7-DEC-1989	LEAD (EPA 6010)	L	72	22-166	2.	95
7-DEC-1989	MOLYBDENUM (EPA 6010)	L	73	15-130	0.	92
7-DEC-1989	NICKEL (EPA 6010)	L	73	16-142	2.	95
7-DEC-1989	SILVER (EPA 6010)	L	70	24-108	1.	95
7-DEC-1989	VANADIUM (EPA 6010)	L	71	25-139	0.	58
7-DEC-1989	ZINC (EPA 6010)	L	69	15-164	3.	95
1-DEC-1989	ARSENIC (EPA 7061)	L	81	47-190	12.	30
28-NOV-1989	CHROMIUM, HEX/TTLC (EPA 7196)	L	105	60-130	2.	40
1-DEC-1989	MERCURY (EPA 7471)	L	102	25-125	3.	51
4-DEC-1989	SELENIUM (EPA 7741)	L	68	30-103	2.	30
8-DEC-1989	THALLIUM (EPA 7840)	L	67	42-127	12.	39
28-NOV-1989	TPH, EXTRACTABLE (EPA 8015)	L	71	60-120	1.	40

M = Matrix Spike
L = Laboratory Control Sample Spike

Paul Christi
Reviewed

Laurie Cullen
Approved

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FAX: (714) 891-5917

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-007/007
Date Sampled: 21-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 11-DEC-1989
Sample Type: LIQUID

Project: (1042) TOPOCK CLOSURE

Sample ID	TIME	Chromium, Trivalent mg/L CALCULATED
1042-43-25	8:15 AM	0.05
Blank		ND(1.)

Paul Chusti
Reviewed

Approved

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MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-007/007
Date Sampled: 21-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 7-DEC-1989
Sample Type: LIQUID

Project: (1042) TOPOCK CLOSURE

Sample ID	TIME	Antimony mg/L EPA 200.7	Barium mg/L EPA 200.7	Beryllium mg/L EPA 200.7	Cadmium mg/L EPA 200.7	Chromium (Total) mg/L EPA 200.7
1042-43-25	8:15 AM	ND(0.1)	0.16	ND(0.02)	ND(0.02)	0.05
Blank		ND(0.1)	ND(0.02)	ND(0.02)	ND(0.02)	ND(0.02)

Paul Christo
Reviewed

Jamie Miller
Approved

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-007/007
Date Sampled: 21-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 7-DEC-1989
Sample Type: LIQUID

Project: (1042) TOPOCK CLOSURE

Sample ID	TIME	Cobalt mg/L EPA 200.7	Copper mg/L EPA 200.7	Lead mg/L EPA 200.7	Molybdenum mg/L EPA 200.7	Nickel mg/L EPA 200.7
1042-43-25	8:15 AM	ND(0.02)	ND(0.05)	ND(0.05)	0.03	0.04
Blank		ND(0.02)	ND(0.05)	ND(0.05)	ND(0.02)	ND(0.02)

Paul Christi
Reviewed

Jonni Cullen
Approved

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MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-007/007
Date Sampled: 21-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 7-DEC-1989
1-DEC-1989
Sample Type: LIQUID

Project: (1042) TOPOCK CLOSURE

Sample ID	TIME	Silver mg/L EPA 200.7	Vanadium mg/L EPA 200.7	Zinc mg/L EPA 200.7	Arsenic mg/L EPA 206.3	Mercury mg/L EPA 245.1
1042-43-25	8:15 AM	ND(0.02)	0.04	0.05	0.015	ND(0.001)
Blank		ND(0.02)	ND(0.02)	ND(0.02)	ND(0.005)	ND(0.001)

Paul Christi
Reviewed

Lauri Cullen
Approved

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-007/007
Date Sampled: 21-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 4-DEC-1989
8-DEC-1989
29-NOV-1989
30-NOV-1989
Sample Type: LIQUID

Project: (1042) TOPOCK CLOSURE

Sample ID	TIME	Selenium mg/L EPA 270.3	Thallium mg/L EPA 279.1	Total Dissolved Solids mg/L EPA 160.1	Fluoride, Total mg/L EPA 340.2	Oil & Grease, Gravimetric mg/L EPA 413.1
1042-43-25	8:15 AM	ND(0.01)	ND(0.3)	1,100.	4.8	ND(5.)
Blank		ND(0.01)	ND(0.3)	ND(10)	ND(0.1)	ND(5.)

Paul Christi
Reviewed

Lynnie Cullen
Approved

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-8932632-007/007
Date Sampled: 21-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Date Analyzed: 29-NOV-1989
Sample Type: LIQUID

Project: (1042) TOPOCK CLOSURE

Sample ID	TIME	Chromium, Hexavalent mg/L EPA 7196	pH units EPA 9040
1042-43-25	8:15 AM	ND(0.05)	8.76
Blank		ND(0.05)	NA

Paul Christi
Reviewed

Lauri Cullen
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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN
Project: (1042) TOPOCK CLOSURE

Analysis No.: G-8932632-007/007
Date Sampled: 21-NOV-1989
Date Sample Rec'd: 22-NOV-1989
Sample Type: LIQUID

QA/QC Summary

Date	Parameter (Method)	QC Type	Average Spike Recovery	Acceptable Range	Relative Percent Difference	Acceptable Range
7-DEC-1989	ANTIMONY (EPA 200.7)	L	102	68-137	0.	30
7-DEC-1989	BARIUM (EPA 200.7)	L	95	63-137	5.	30
7-DEC-1989	BERYLLIUM (EPA 200.7)	L	97	66-130	5.	30
7-DEC-1989	CADMIUM (EPA 200.7)	L	102	72-141	2.	25
7-DEC-1989	CHROMIUM (EPA 200.7)	L	105	69-148	2.	30
7-DEC-1989	COBALT (EPA 200.7)	L	100	73-132	0.	30
7-DEC-1989	COPPER (EPA 200.7)	L	96	68-129	4.	25
7-DEC-1989	LEAD (EPA 200.7)	L	102	65-144	2.	25
7-DEC-1989	MOLYBDENUM (EPA 200.7)	L	104	69-144	1.	25
7-DEC-1989	NICKEL (EPA 200.7)	L	103	65-146	2.	25
7-DEC-1989	SILVER (EPA 200.7)	L	100	25-147	5.	52
7-DEC-1989	VANADIUM (EPA 200.7)	L	102	73-130	3.	25
7-DEC-1989	ZINC (EPA 200.7)	L	98	73-138	3.	25
1-DEC-1989	ARSENIC (EPA 206.3)	L	104	78-118	2.	25
1-DEC-1989	MERCURY (EPA 245.1)	L	100	41-137	10.	37
4-DEC-1989	SELENIUM (EPA 270.3)	L	108	41-137	0.	25
8-DEC-1989	THALLIUM (EPA 279.1)	L	90	75-109	0.	25
30-NOV-1989	FLUORIDE (EPA 340.2)	L	107	87-120	1.	15
30-NOV-1989	OIL & GREASE, GRAVIMETRIC (EPA 413.1)	L	80	65-112	6.	26
30-NOV-1989	CHROMIUM, HEXAVALENT (EPA 7196)	L	92	60-130	9.	40

M = Matrix Spike
L = Laboratory Control Sample Spike

Paul Christi
Reviewed

Lauri Allen
Approved

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Enseco

ENSECO—CRL/Ventura
2810 Bunsen Ave. Unit A • Ventura, CA 93003
(805) 650-0546 • FAX: (805) 650-0756

CRL-Garden Grove
7440 Lincoln Way
Garden Grove, CA 92641

12/04/89

Attn: Technical Services
714/897/2125

Project: Mittelhauser
(1042) Topock closure

Sample #: 9332115101
Received: 11/28/89
Type: Soil

Collector: Client
Sampling Date & Time: 11/18/89, ****
Method: Not Specified

I.D.: 932632-001 (1042-43-12)

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Fluoride, Total	EPA 340.1/.2	380	mg/kg	50

Sample #: 9332115102
Received: 11/28/89
Type: Soil

Collector: Client
Sampling Date & Time: 11/18/89, ****
Method: Not Specified

I.D.: 932632-002 (1042-43-16)

Fluoride, Total	EPA 340.1/.2	650	mg/kg	50

Sample #: 9332115103
Received: 11/28/89
Type: Soil

Collector: Client
Sampling Date & Time: 11/15/89, ****
Method: Not Specified

I.D.: 932632-003 (1042-52-8)

Fluoride, Total	EPA 340.1/.2	650	mg/kg	50

Reviewed

Approved

[ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit]
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CRL Environmental - Ventura
2810 Bunsen Avenue • Ventura, CA 93003
(805) 650-0546 • (800) LAB-1-CRL
FAX: (805) 648-2755

Laboratory Report - QA/QC Summary
Page 1

Client: CRL-Garden Grove
Sample#: 93321151##
Received:11/28/89
*Project: Mittelhauser
*(1042) Topock closure

Constituent	Method	Batch #	QC Type	Spike Recovery Avg.	Spike Recovery Range	Relative Percent Difference RPD	Relative Percent Difference Range	Sample Analysis Date
Matrix: Solid								
Flouride	EPA 340.1.2	1129A	L	88	(66-114)	6	(0-20)	12/01/89

M = Matrix Spike
L = Laboratory Control Sample Spike
* = Value is outside current laboratory statistical limits.
*** = N/A

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MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD 008116

PAGE 1 OF 1

PROJECT NUMBER: 1042

PROJECT NAME: Topock Closure

SAMPLED BY: (PRINTED AND SIGNATURE) Dave Dorn

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	Be	Cd	Cu	Cr	CrVI	Pb	Hg	Zn	mod 8015 diesel	REMARKS
						ANALYSIS(ES): Total metals							PRESERVATIVE		
1042-43-26	3/20	955	Soil	PH-10 / PT-3, 5'	1	X	X	X					X		
1042-43-28	3/20	1015	Soil	PH-6, 6'	1				X		X				
1042-43-29	3/20	1020	Soil	PF-8, 2'	1							X			
1042-43-30	3/20	1225	Soil	PH-2, 5'	1				X	X	X		X		
1042-43-31	3/20	1440	Soil	PH-3, 5'	1					X					
1042-43-32	3/20	1450	Soil	Oil Pad, 5'	1									X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)		
Dave Dorn	3/21	830	Fed ex	TOTAL NO. OF SAMPLES (THIS SHIPMENT): 6	LABORATORY: Enseco
				TOTAL NO. OF CONTAINERS (THIS SHIPMENT): 6	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: L. Cullen	LABORATORY PHONE NUMBER: (714) 898 6320
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) 3/22/90 1030	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

MITTELHAUSER Corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD 008116

PAGE 1 OF 1

PROJECT NUMBER: 1042

PROJECT NAME: Topock Closure

SAMPLED BY: (PRINTED AND SIGNATURE) Dave Dorn

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	Be	Cd	Cu	Cr	CrVI	Pb	Mo	Zn	mod 8015 diesel	REMARKS
						ANALYSIS(ES): Total metals							PRESERVATIVE		
1042-43-26	3/20	955	Soil	PH-10 / PT-3, 5'	1	X	X	X					X		
1042-43-28	3/20	1015	Soil	PH-6, 6'	1				X		X				
1042-43-29	3/20	1020	Soil	PF-8, 2'	1							X			
1042-43-30	3/20	1225	Soil	PH-2, 5'	1				X	X	X		X		
1042-43-31	3/20	1440	Soil	PH-3, 5'	1					X					
1042-43-32	3/20	1450	Soil	Oil Pad, 5'	1									X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 6	LABORATORY:
Dave Dorn	3/21	830	Fed Ex	TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 6	Enseco
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: L. Cullen	LABORATORY PHONE NUMBER: (714) 898 6370
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) 3/22/90 1013 am	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

Enseco - CRL
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Enseco
A CORNING Company

DHS CERTIFICATE #157

April 17, 1990

MITTELHAUSER CORP.
23272 MILL CREEK RD., STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9008116-001/005
Date Sampled: 20-MAR-1990
Date Sample Rec'd: 22-MAR-1990
Project: (1042) TOPOCK CLOSURE

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: G-9008116-001/005 shown above.

The samples were received by CRL in a chilled state, intact and with the chain-of-custody record attached.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.

Solid samples are reported on "as received" basis.

Laurie Cullen
Reviewed

Ferol Kimble
Approved

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive ... for advertising or publicity purposes without authorization is prohibited

Enseco - CRL
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Enseco
A CORNING Company

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN
Project: (1042) TOPOCK CLOSURE

Analysis No.: G-9008116-001/006
Date Sampled: 20-MAR-1990
Date Sample Rec'd: 22-MAR-1990
Sample Type: SOLID

QA/QC Summary

Date	Parameter (Method)	QC Type	Average Spike Recovery	Acceptable Range	Relative Percent Difference	Acceptable Range
13-APR-1990	BERYLLIUM (EPA 6010)	L	80	60-126	4.	30
13-APR-1990	CADMIUM (EPA 6010)	L	88	63-126	4.	25
13-APR-1990	CHROMIUM (EPA 6010)	L	94	63-126	7.	30
13-APR-1990	COPPER (EPA 6010)	L	87	62-126	2.	30
13-APR-1990	LEAD (EPA 6010)	L	90	61-126	4.	30
13-APR-1990	MOLYBDENUM (EPA 6010)	L	85	61-126	5.	32
13-APR-1990	ZINC (EPA 6010)	L	89	60-126	2.	30
27-MAR-1990	CHROMIUM, HEXAVALENT (EPA 7196)	L	110	60-130	11.	40
28-MAR-1990	TPH, EXTRACTABLE (EPA 8015)	L	94	60-120	26.	40

M = Matrix Spike
L = Laboratory Control Sample Spike

Reviewed

Approved

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Enseco - CRL
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FAX: (714) 891-5917

Enseco
A CORNING Company

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9008116-001/005
Date Sampled: 20-MAR-1990
Date Sample Rec'd: 22-MAR-1990
Date Analyzed: 13-APR-1990
27-MAR-1990
Sample Type: SOLID

Project: (1042) TOPOCK CLOSURE

Sample ID	Molybdenum mg/kg EPA 6010	Zinc mg/kg EPA 6010	Chromium, Hexavalent mg/kg EPA 7196
1042-43-26		12	
1042-43-29	0.82		
1042-43-30		16	ND(1)
1042-43-31			ND(1)
Blank	ND(0.05)	ND(0.05)	ND(1)

Reviewed

Approved

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive

APPENDIX C

UNIFORM HAZARDOUS WASTE MANIFESTS

Form Approved OMB No. 2050—0039 (Expires 9-30-88)
Please print or type. (Form designed for use on elite (12-pitch typewriter).

Toxic Substance ... Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAT080011729
Manifest Document No.: 10001
2. Page 1 of 1
Information in the Shaded Areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Pacific Gas and Electric Company, Topock Compressor Stn.
P.O. Box 337, Needles CA 92363
4. Generator's Phone (619) 326-2615

A. State Manifest Document Number: 87397272
B. State Generator's ID: HYNQ360087798
C. State Transporter's ID: 907817
D. Transporter's Phone: 714/826-6320
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID: CAT000646117
H. Facility's Phone: (800) 222-2964

5. Transporter 1 Company Name: American Environmental Management Corp.
6. US EPA ID Number: CAD980884183
7. Transporter 2 Company Name:
8. US EPA ID Number:
9. Designated Facility Name and Site Address:
Chemical Waste Management, Inc.
35251 Old Skyline Road
Kettleman City, CA 93239
10. US EPA ID Number: CAT000646117

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
[redacted]					State [redacted] EPA [redacted]
b. Hazardous Waste Solid, n.o.s. ORM-E, NA 9189	DD1	CM	00006	Y	State 491 EPA/Other D007
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
[redacted]
b. Contaminated pipes, pumps, debris
759430

K. Handling Codes for Wastes Listed Above
03
03

15. Special Handling Instructions and Additional Information
Avoid inhalation and contact with skin or eyes.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Rex Avila
Signature: Rex Avila
Month Day Year: 03 02 89

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Charles Cargo
Signature: Charles Cargo
Month Day Year: 03 02 89

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space
11 - Improper

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Steve Pickell
Signature: [signature]
Month Day Year: [illegible]

GENERATOR
TRANSPORTER
FACILITY

HS 5022 A (1-87)
PA 8700—22
Rev. 9-68) Previous editions are obsolete.

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

INSTRUCTIONS ON THE BACK

R8176-04

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

4. Generator's US EPA ID No. CAT080011729 — Manifest Document No.

Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Pacific Gas + Electric Co. Topock Compressor Sta.
P.O. Box 337 Needles CA 92363

State Manifest Document Number 8739727A

State Generator's ID

5. Transporter 1 Company Name — 6. US EPA ID Number
American Environmental Mgt Corp. CAD980884183

7. Transporter 2 Company Name — 8. US EPA ID Number

9. Designated Facility Name and Site Address — 10. US EPA ID Number
Chemical Waste Management
35251 Old Skyline Rd.
Kettleman City CA 93239 CAT000646117

G. State Facility's ID CAT000646117

H. Facility's Phone 800-222-2964

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Hazardous Waste Solids, n.o.s. 2. ORM-E, NA 9189	010	DM	035000	P	State 497 EPA/Other D007
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above — K. Handling Codes for Wastes Listed Above
Chromium Sludge — 03

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Rex Avila — Signature: Rex Avila — Month Day Year: 10 3 0 2 8 9

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Charles Cargo — Signature: Charles Cargo — Month Day Year: 10 3 0 2 8 9

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name — Signature — Month Day Year

GENERATOR — TRANSPORTER — FACIL

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

LS 8022 A (11-87) — Where copies remain, the copy to DOHS within 30 days to: P.O. Box 3000, Sacramento, CA 95812 — INSTRUCTIONS ON THE BACK

(Rev. 9-88) Previous editions are obsolete.

R 8176-05

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter).

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAT080011729 — Manifest Document No.: 100004
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Pacific Gas and Electric Co, Topock Compressor Station, P.O. Box 337, Needles, CA 92363
4. Generator's Phone (619) 326-2615

A. State Manifest Document Number: 89614567
B. State Generator's ID: HYHQ36008798

5. Transporter 1 Company Name: American Environmental MC.
6. US EPA ID Number: CAD980884183
C. State Transporter's ID: 0076[redacted]37,7634
D. Transporter's Phone: 714/826-6320

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address: Chem Waste Man. Inc, 35251 Old Skyline Rd, Kettleman City, CA 93239
10. US EPA ID Number: CAT000646117
G. State Facility's ID: CAT000646117
H. Facility's Phone: 800-222-2964

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Hazardous Waste Solid, n.o.s. ORM-E NA 9189	002	CM	00020	Y	State 491; EPA/Other D007
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above: Contaminated Pipes, pumps, debris. Profile J59430

K. Handling Codes for Wastes Listed Above: a. 03; b.; c.; d.

15. Special Handling Instructions and Additional Information: Avoid inhalation and contact with skin and eyes.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: x GEORGE L. MUZIO — Signature: [signature] — Month Day Year: 11 21 89

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: x CHARLIE CARGO — Signature: Charlie Cargo — Month Day Year: 11 21 89

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: ALAN MANEY — Signature: Alan Maney — Month Day: 11 30 89

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802, WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1-88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete

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To: P.O. Box 3000, Sacramento, CA 95812

Form Approved OMB No. 2050—0039 (Expires 9-30-91)
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See Instructions on Back of Page 6 and Front of Page 7

Department of Health Servi
Toxic Substances Control Divi
Sacramento, Califo

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAT080011729 — Manifest Document No.: 10002
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Pacific Gas & Electric Co, Topock Compressor Station PO Box 337 Needles
4. Generator's Phone: 619 326 2615 CA 92363
A. State Manifest Document Number: 89614570
B. State Generator's ID: HYHQ36008798

5. Transporter 1 Company Name: American Enmtl M.C.
6. US EPA ID Number: CAD980884183
C. State Transporter's ID: 007625
D. Transporter's Phone: 714/826-6320

7. Transporter 2 Company Name: —
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address: Chem Waste Man. Inc. 35251 Old Skyline Rd Kettleman City CA 93239
10. US EPA ID Number: CAT000646117
G. State Facility's ID: CAT000646117
H. Facility's Phone: 800 222 2964

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Hazardous waste solid n.o.s. ORM-E NA9189	001	CM	000110	Y	State 491 / EPA/Other D007
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: Contaminated pipes, pumps debris Profile: J59430

K. Handling Codes for Wastes Listed Above: a. 03 b. c. d.

15. Special Handling Instructions and Additional Information: BIN ID # 007639
Avoid inhalation and contact with skin or eyes

16.
GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: GEORGE L. MUZIO — Signature: George L. Muzio — Month Day Year: 11 15 89

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: LARRY MACIAS — Signature: [signature] — Month Day Year: 11 15 89

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: CHARLIE CARGO — Signature: Charlie Cargo — Month Day Year: 11 18 89

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: ALAN. MANEY — Signature: Alan Maney — Month Day Year: 11 20 89

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL ... ONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

896145 (U)

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

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State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter).

B

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAT080011729 | Manifest Document No.: 19003

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Pacific Gas and Electric Co., Topock Compressor Station, PO Box 337, Needles CA 92363

4. Generator's Phone: 619 326 2615

A. State Manifest Document Number: 89614566

B. State Generator's ID: HYHQ36008798

5. Transporter 1 Company Name: American Environtl M.C. | 6. US EPA ID Number: CAD980884183

C. State Transporter's ID: D07LAT

D. Transporter's Phone: (714) 826-6320

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: Chem. Waste Management, Inc., 3.5251 Oldskyline Rd, Kettleman City CA 93239 | 10. US EPA ID Number: CAT000646117

G. State Facility's ID: CAT000646117

H. Facility's Phone: 800 222 2964

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Hazardous Waste Solid, n.o.s. ORM-E NA9189	001	CM	000110	Y	State 491 / EPA/Other D007
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: Contaminated pipes, pumps, debris
Profile: J59430

K. Handling Codes for Wastes Listed Above: a. 03 | b. | c. | d.

15. Special Handling Instructions and Additional Information: Avoid inhalation and contact with skin or eyes

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Rex Avila | Signature: Rex Avila | Month Day Year: 11 17 89

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Charlie Cargo | Signature: Charlie Cargo | Month Day Year: 11 17 89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Alan Maney | Signature: Alan Maney | Month Day Year: 11 20 89

GENERATOR

TRANSPORTER

FACILITY

8022 A (1/88)
8700—22
9-88) Previous editions are obsolete.

Do Not Write Below This Line

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

D 20700

APPENDIX D

LETTER DOCUMENTING RECEIPT AND RECYCLE OF SCRAP STEEL

RECEIVED
MAR 1 5 1989

AMERICAN
METAL
RECYCLING, INC.

March 8, 1989

American Environmental Management, Inc.
10960 Boatman Way
Stanton, California 90680

Attention: Richard Macias

Dear Sir:

In response to your request, we are issuing this letter to certify that the scrap iron we received from Topoc Compressor Station, Needles, California, on February 9, 1989 will be disposed of at a smelting company overseas.

This letter, however, shall not be construed as a Certificate Of Tank Disposal/Destruction Form.

Sincerely,

A.M.R.
Darryl Canell

DC/cr

2202 SOUTH MILLIKEN AVENUE • ONTARIO, CA 91761 • (714) 988-8000

APPENDIX E

PHOTOGRAPHS

MITTELHAUSER corporation

PG&E
Topock Compressor Station
Phases 1 & 2, HWMF Closure

May 1990

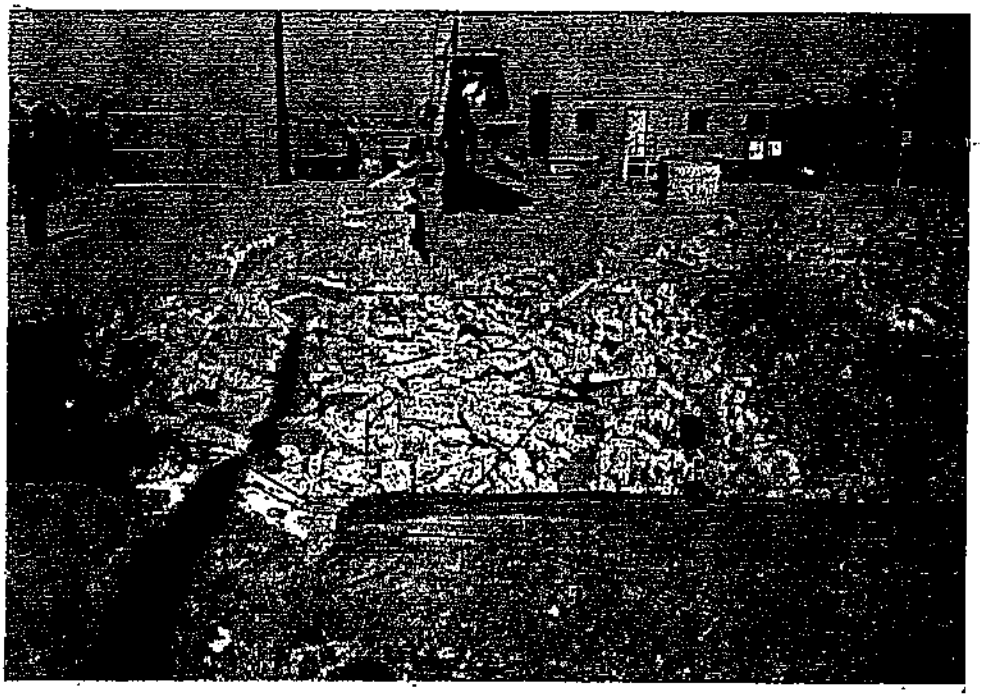
1042IV

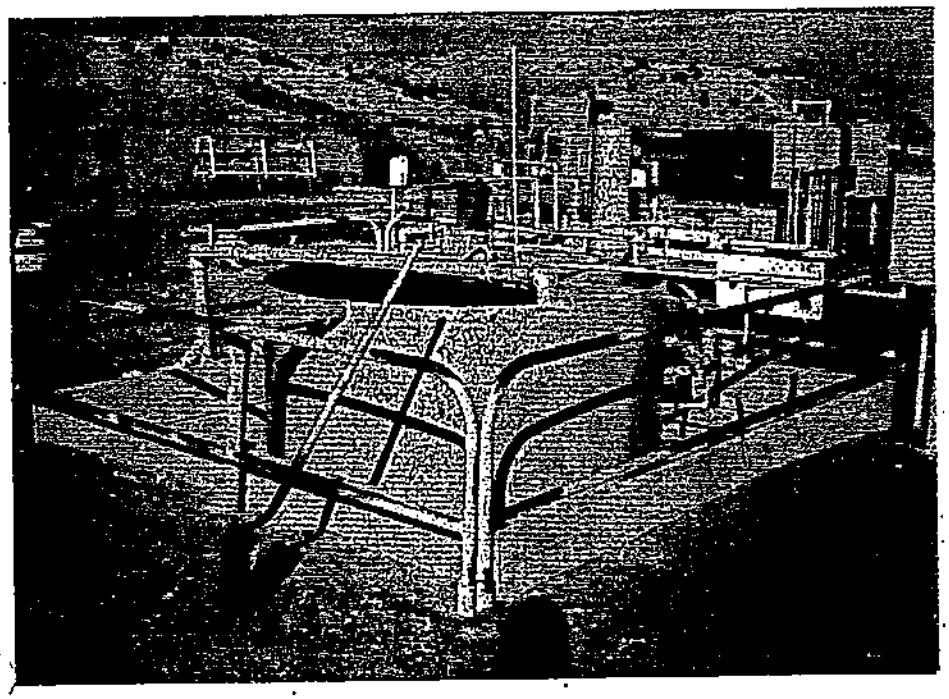
1

Sweeping Sludge from the West Drying Bed

2

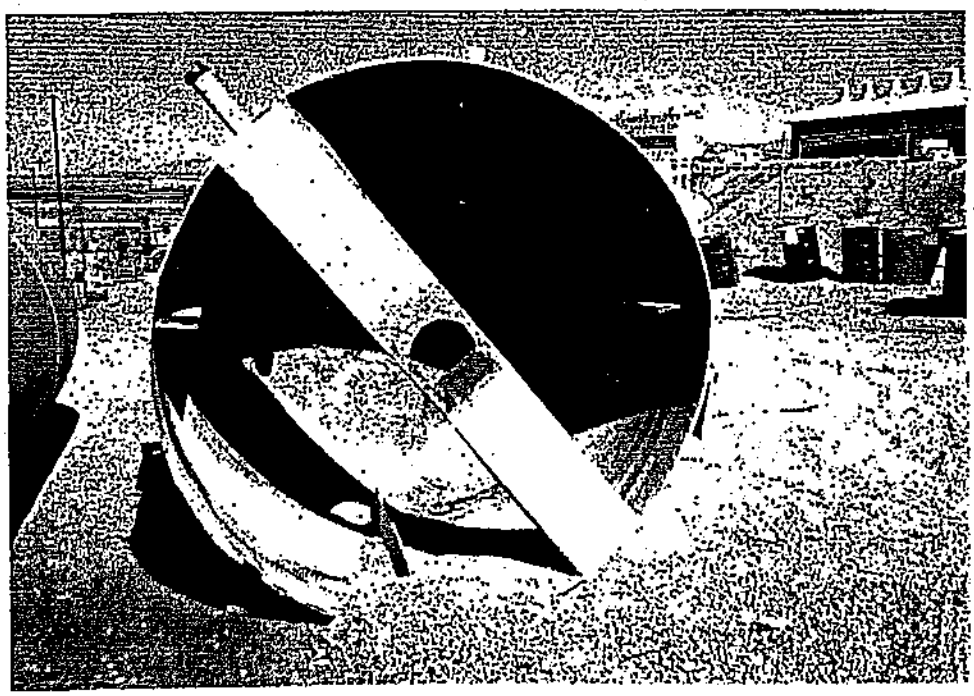
Breaking the West Drying Bed Concrete





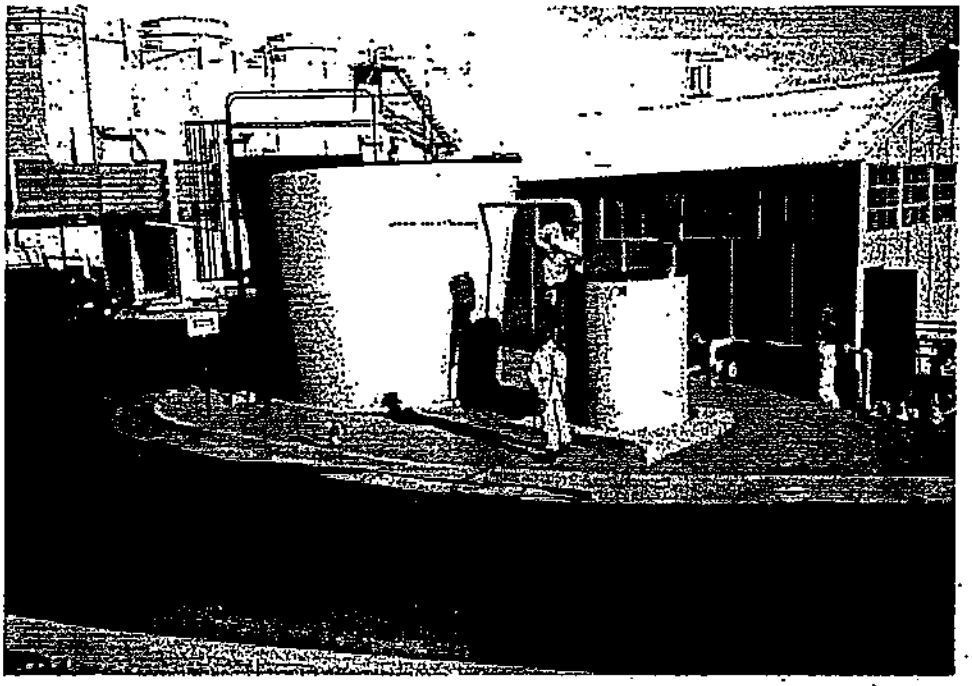
3

Chromate Reduction Tank Before Closure



4

Inside the Chromate Reduction Tank After Hydroblasting

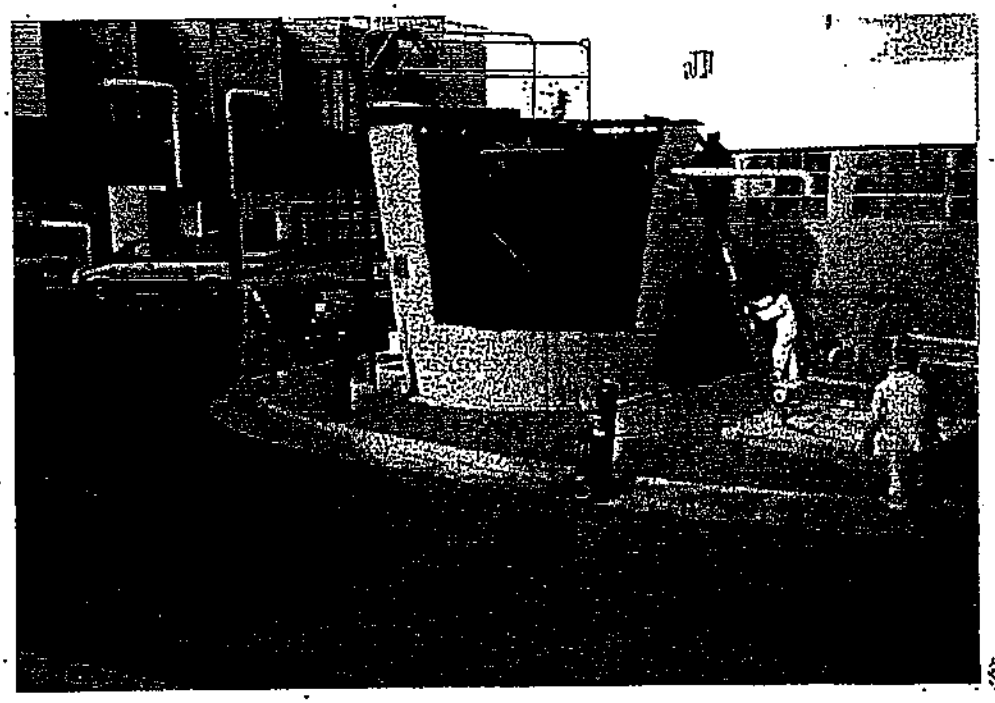


5

Hydroblasting the Process Pump Tank, the Precipitation Tank is on the Left

6

Cutting the Precipitation Tank

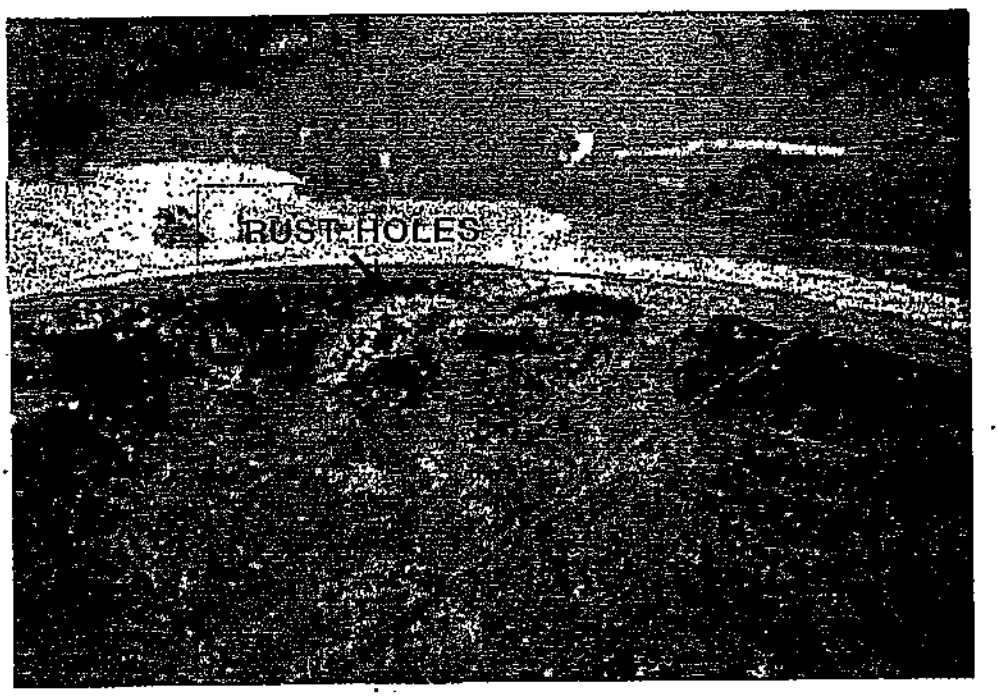


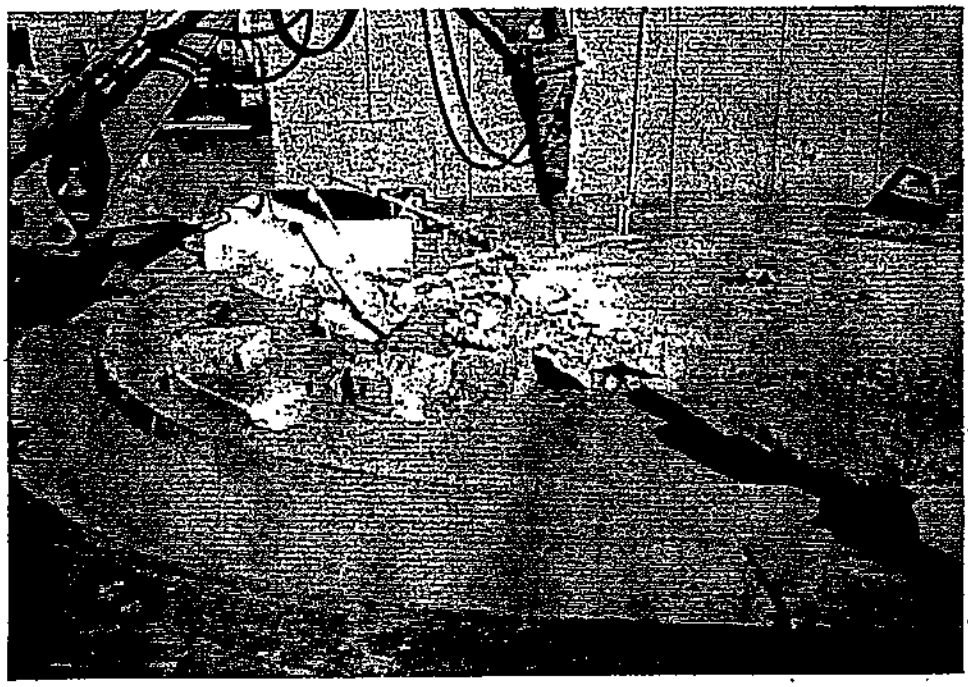
7

Shoveling Sludge out of the Precipitation Tank

8

Rust Holes on the North Side of the Bottom of the Precipitation Tank





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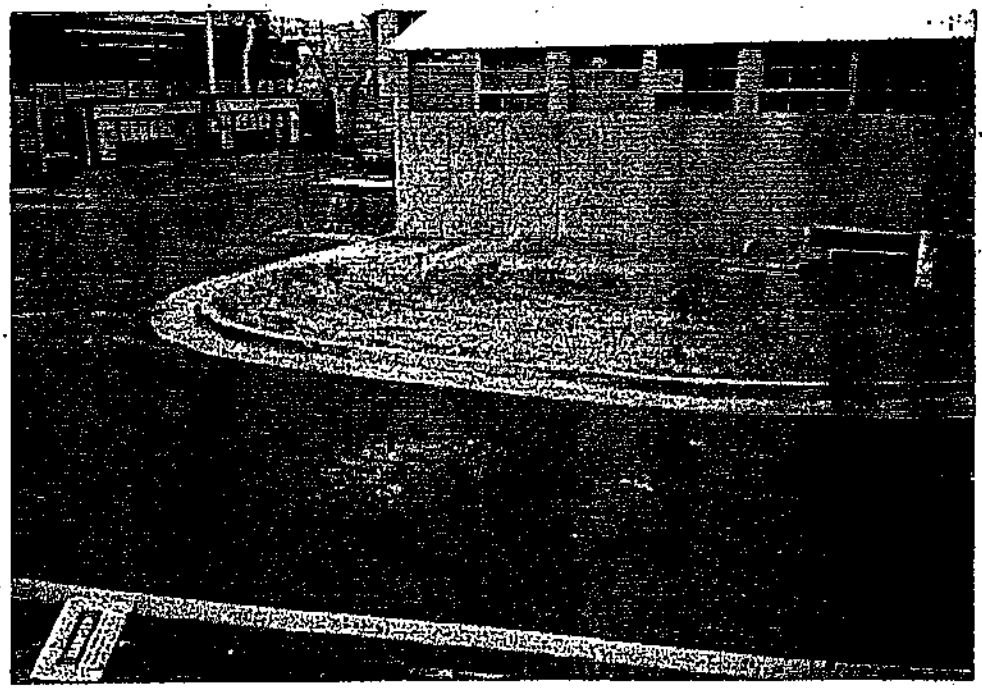
Breaking the Foundation of the Precipitation Tank



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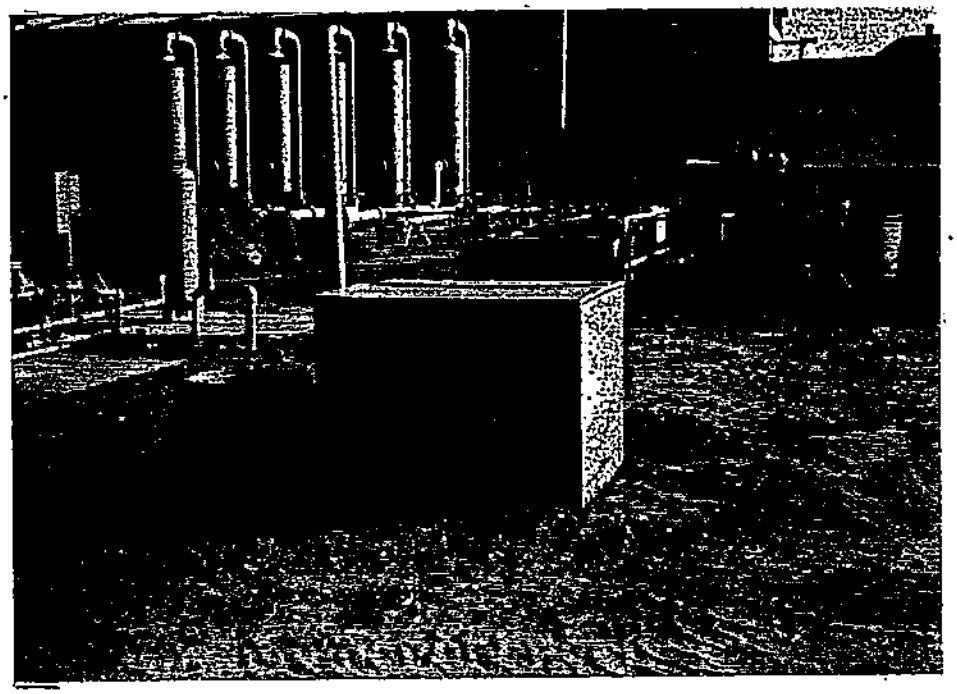
Precipitation and Process Pump Tank Area After Backfilling



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Above-Ground Access Box and Manhole Over The Transfer Sump Before Closure

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Transfer Sump Before Removal

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Transfer Sump Excavation
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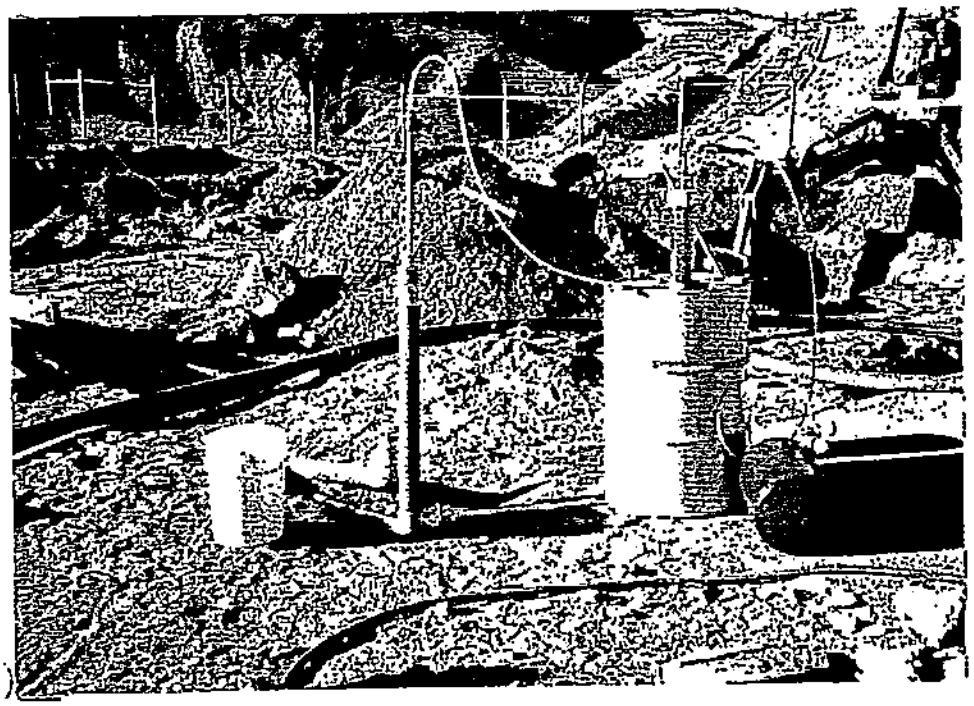

15

Pressure Test Equipment on Section D-1, Excavating the East Side of the Transfer Sump in the Background

Trident Environmental Consultants (Trident). 1993. *Closure Certification Report for Wastewater Evaporation Ponds at PG&E's Topock Compressor Station, Needles, California*. December 27.

CLOSURE CERTIFICATION REPORT FOR WASTEWATER EVAPORATION PONDS AT PG&E's TOPOCK COMPRESSOR STATION NEEDLES, CALIFORNIA

Submitted for Approval to:

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Prepared By:

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For:

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December 27, 1993

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EXECUTIVE SUMMARY

This closure certification report details activities undertaken by Pacific Gas and Electric (PG&E) to close four former wastewater evaporation ponds at the Topock natural gas compressor station. Summary information, results of investigations, and conclusions are as follows:

1. The pond closure was conducted from September through November, 1993. Over 8,500 cubic yards of evaporative pond sludge, liner cover sand, and liner were removed and disposed at Class I and III landfills by Allwaste, Inc. The results of previous analytical testing for the sludge indicated that it was a non-hazardous, designated waste.

2. During excavation, the 20 mil PVC pond liners were examined and found to be in excellent condition, even though they were approximately 20 years old. No punctures, rips or environmental stress cracks were found in the liners during the investigation. The PVC material, when examined in the field, appeared to exhibit reasonable puncture resistance, elasticity, tensile strength and other physical properties. Samples of the liner seams were examined and were found to be in very good condition. The liners did not shred during removal.

3. Substantial amounts of water were found in Ponds 2, 3, and 4. Nearly 2,000 gallons of water were pumped out of Pond 3. This is further evidence that the liner integrity was intact since the ponds have not been used for wastewater disposal for several years.

4. The sand layer beneath the liner was examined as the pond liner was removed. Results of the examination are as follows: Over the entire area of the four ponds, the subliner sand was very clean and was not discolored, except in two very small areas. Discolored subliner sand or soil was easy to identify in contrast to the liner cover sand which had been

affected by the wastewater. The unaltered subliner sand was a natural tan color in contrast to the contaminated liner cover sand which exhibited colors ranging from black to orangish red.

5. A subsurface sampling program was conducted beneath the excavated ponds according to the approved Closure Plan. Twenty-seven borings were drilled, and 216 soil samples were collected.

6. Results of subliner soil sample analyses indicate that all of the metals concentrations were at levels that were below or near background. Some of the subliner soil sample results marginally exceeded the background standards but were well within the naturally occurring soil concentration ranges for these metals.

7. The wastewater influent pipe located between the compressor station and the ponds was pressure tested and found not to leak. A water sample was collected from the pipe and analyzed for total chromium. Results of water sample analysis indicated non-detectable levels of total chromium.

8. Based on these findings, it is recommended that the wastewater evaporation pond facility be considered to be clean closed.

CLOSURE CERTIFICATION

PROFESSIONAL ENGINEER

This report details the Phase III pond closure activities for the RCRA wastewater evaporation pond facility at Pacific Gas and Electric Company's Topock Compressor Station, near Needles, California. The closure activities were performed in compliance with the approved Closure Plan, dated October 28, 1985, and revised in August 1986, except as identified as deviations from the Closure Plan in this report. The statements, conclusions and recommendations herein are based on my understanding of the site conditions and operations. A conscientious effort was made to evaluate all aspects of the site conditions. The collected data is considered to be technically accurate and complete to the best of my knowledge.

12/27/93

Date

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Michael E. Heckathorn

Michael E. Heckathorn
Registered Civil Engineer
State of California
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CLOSURE CERTIFICATION - PG&E

As specified in Section 11.7 of the Closure Plan, I have reviewed the activities regarding the Phase III closure activities for the wastewater evaporation pond facilities at the Topock Compressor Station. Based upon discussions with PG&E and Trident Environmental personnel directly involved in implementing closure, and my review of the attached Closure Certification Report, project correspondence, the approved Closure Plan and personal inspections of the site, I believe that these activities are in substantial compliance with both the intent and the procedures of the approved Closure Plan.

Based upon information which I have personally reviewed, I hereby certify that, to the best of my knowledge, the activities described in this Closure Certification Report, except as identified as deviations from the Closure Plan, were performed in accordance with the approved Closure Plan.

Signature

Melvin Wong
Acting Project Manager

12-23-93
Date

Pacific Gas and Electric Company

1.0 INTRODUCTION

This Resource Conservation and Recovery Act (RCRA) Closure Certification Report is being submitted to the California Department of Toxic Substances Control (DTSC) and Colorado River Regional Water Quality Control Board (CRRWQCB) for closure of four wastewater ponds formerly used to evaporate cooling tower blowdown and other wastewaters at PG&E's Topock Natural Gas Compressor Station. PG&E has completed the closure tasks for the RCRA wastewater handling facilities at the Topock Compressor Station, and is submitting this pond closure certification for clean closure approval by the DTSC and the CRRWQCB.

The Topock Compressor Station is located adjacent to Interstate 40, fourteen miles southeast of Needles, California. (Figure 1). The station was constructed in 1951, and is a key component in PG&E's Line 300 gas transmission system, compressing approximately one billion cubic feet of natural gas each day.

An average of 20,000 gallons of wastewater is generated daily, based on annual volumes. Thus, the compressor station requires evaporation ponds for wastewater disposal (PG&E 1992). The majority of the wastewater originates from open, recirculating induced-draft cooling towers that are used to cool the hot compressed gas leaving the compressor. Prior to October 1985, a hexavalent chromium containing corrosion inhibitor was injected into the cooling tower water for biocidal and corrosion inhibition purposes. The average hexavalent chromium concentration in the wastewater was 10 mg/l, making it a hazardous waste under current regulations (PG&E 1986).

The goal of this Phase III closure was to clean close the remaining hazardous waste management facilities - namely the wastewater evaporation ponds.

In the March 28, 1988 Federal Register (53 FR 9944), the EPA clearly defined clean closure for surface impoundments:

> "A surface impoundment/waste pile "owner or operator" must remove or decontaminate all contaminated material, including liners and leachate collection devices, unsaturated soils, saturated soils, groundwater, surface water, surface water sediments, and any other material containing hazardous constituents released from a hazardous waste management unit prior to completion of closure. Post-closure care is necessary where any of these or other waste residues, including any waste residues located in the groundwater, remain at the site of the unit at or above levels of human health or environmental concern following completion of closure activities."

Federal regulations 40 Code of Federal Regulations (CFR) 265.228(a)(1), published in the March 19, 1987 and March 23, 1988 Federal Registers (52 FR 8704 and 53 FR 9944, respectively), explicitly detail which materials must be removed or decontaminated to complete clean closure of an evaporation pond hazardous waste management unit (HWMU). The following Closure Certification Report is in compliance with the regulations stated in 40 CFR 265, and the equivalent state regulations contained in Chapter 15, Title 22, California Code of Regulations (CCR), for the RCRA closure of an interim status treatment, storage and disposal (TSD) facility.

The Phase I and II closure activities have already been completed. The Phase I and II closure included all hazardous waste management facilities associated with wastewater treatment (drying beds, treatment tanks, transfer sump and piping). Phase I and II closure activities are described in the report - *"Phase 1 and 2 Closure Certification Report, Hazardous Waste Management Facilities, Topock Compressor Station, Needles, California"* by the Mittelhauser Corp.,

submitted to DTSC on July 23, 1990. The conclusion of that report indicates that all hazardous waste management facilities were removed and that final confirmation soil samples for these facilities were all below background. Therefore the hazardous waste management facilities, (the former wastewater treatment system), covered in Phase I and II are considered clean closed. Site historical details are presented in Section 2.2 of this report - Regulatory History.

During the Phase III pond closure tasks, PG&E removed all sludge, pond liner cover soil, liners and aboveground pond piping from the pond facility. After removal of the waste material and pond liners, soil samples were collected to demonstrate that no hazardous constituents were left in place that were at, or above, levels that impact human health or the environment. Groundwater issues are discussed separately in PG&E's report titled *"Water Quality Analyses, Old Evaporation Ponds, PG&E Topock Compressor Station"*, submitted to DTSC on June 11, 1993. This report concluded that the old evaporation ponds have not impacted groundwater. In its October 4, 1993 letter, DTSC stated that, "the apparent anomalies in the groundwater samples from MWP-8 and other wells are currently viewed as coming from naturally occurring sources". Thus, PG&E believes these ponds are clean closed and that a post-Closure Plan, specifying supplementary monitoring requirements, is not necessary after completion of closure activities.

1.1 Closure Certification Objectives

The overall objective in this Closure Certification Report is to document and certify that the closure process activities have been adequately carried out to clean close the ponds. This report describes the closure activities and the results of post-closure soil monitoring conducted to demonstrate that no hazardous constituents were left in place at, or above, levels of human health or environmental concern.

2.0 SITE INFORMATION

2.1 Site Description

The Topock Compressor Station is situated in the eastern part of San Bernardino County, about 14 miles southeast of Needles, California, and 0.25 miles east of the Colorado River (Figure 1). The station compresses natural gas pumped through a pipeline from out-of-state sources to PG&E's markets; it handles one-third of PG&E's total natural gas supply. The station has ten compressors with a total combined output of 35,000 horsepower. Process and cooling water, obtained from three wells in Arizona, is pumped through a six inch line to two 250,000-gallon storage tanks situated on a hill south of the compressor station. Two wet cooling towers are used to cool the compressed gas and the compressor lubrication system. Before October 1, 1989, blowdown (wastewater) from these cooling towers was discharged into the four old evaporation ponds situated approximately 2,000 feet southwest of the compressor station (Figure 2). Since October 1, 1989, blowdown has been discharged into four new evaporation ponds situated approximately 3,500 feet northwest of the compressor station. Until 1985 and during the time the old evaporation ponds were being utilized, hexavalent chromium was added to the cooling water as a corrosion inhibitor and biocide. The cooling water blowdown was treated to remove hexavalent chromium before the water was discharged to the old evaporation ponds. The wastewater treatment system reduced the hexavalent chromium to trivalent chromium. The units used for precipitation and drying of the sludge have been removed and clean-closed. The old evaporation ponds, which are the subject of this investigation, are being clean-closed. Until these evaporation ponds are closed, the facility will continue to operate under "an interim" status classification according to the Resource Conservation and Recovery Act (RCRA) and Title 22 and 23, California Code of Regulations (CCR).

2.2 Regulatory History

PG&E's Topock Gas Compressor Station is registered with the US Environmental Protection Agency (EPA) and the DTSC as a hazardous waste treatment and storage facility, EPA ID No. CAT080011729. The old evaporation ponds are regulated by Colorado River Basin Regional Water Quality Control Board (CRRWQCB) Order No. 85-99, "Waste Discharge Requirements for Pacific Gas and Electric Company Topock Compressor Station".

On November 17, 1980, PG&E submitted a RCRA Part A permit application to the Department of Health Services (now the DTSC) covering the chromium treatment system operated at Topock. This treatment system included hexavalent chromium wastewater treatment facilities, chromic hydroxide drying beds, and four wastewater evaporation ponds. The wastewater treatment facilities and chromic hydroxide drying beds were used to precipitate out hexavalent chromium from the cooling tower wastewater before it was discharged to the ponds. DTSC issued an Interim Status Document in April 1981 that outlined the requirements for operation of the facility as a RCRA hazardous waste facility. PG&E began installing a groundwater monitoring system in 1985, completing it in early 1986.

On May 8, 1985, EPA Region IX requested that PG&E prepare a Part B permit application for the Topock Compressor Station. After a review of applicable regulations affecting the operation of its hazardous waste management facilities, PG&E decided to close these facilities (including the four old evaporation ponds) and discontinue use of hexavalent chromium in its cooling towers in October 1985. On November 7, 1985, PG&E submitted to DTSC a Closure Plan for the hazardous waste management facilities at Topock. The Closure Plan was revised to incorporate DTSC and CRRWQCB

comments and was resubmitted in August 1986. The Closure Plan and subsequent revisions were approved by DTSC and EPA Region IX on July 10, 1987 and June 26, 1987, respectively.

In November 1988, PG&E began closure activities of the chromate reduction, precipitator, and process pump tanks, transfer sump, chromic hydroxide sludge drying beds, and associated piping (Phases 1 and 2). Closure of the evaporation ponds (Phase 3) could not proceed until new surface impoundments were constructed to replace the old evaporation ponds and the waste had dried sufficiently. New surface impoundments were constructed and began operating in October 1989. PG&E submitted to DTSC on July 23, 1990, a Closure Certification Report for clean closure of the chromium treatment facilities in Phases 1 and 2.

On August 1, 1986, the PG&E Department of Engineering Research completed a report entitled *Construction, Development, and Sampling of Topock Compressor Station RCRA Groundwater Monitoring Wells* (PG&E 1986a). This report documented the status of the groundwater monitoring system installed at the old Topock evaporation ponds and provided hydrogeological information in support of the design of the monitoring system, the procedures used for well installation and sampling, and the analytical results from the first sampling effort. Monitoring wells MWP–3, MWP–8, MWP–9, MWP–10 and piezometers P–1 and P–2 were installed at the site from July 1985 to February 1986. (See Figure 3). Several other wells were constructed (MWP–1, MWP–2, and MWP–7) as monitoring wells during this time period, but were not utilized as monitoring wells due to dry conditions. Piezometer P–2 was converted to well MWP–12 at a later date.

On May 19, 1987, the CRRWQCB determined that the old evaporation ponds were not subject to regulation under the Toxic Pits Control Act (TPCA).

On August 20, 1986, the CRRWQCB and DTSC conducted a Comprehensive Monitoring Evaluation (CME) inspection of the old pond site at Topock. As a result of this CME inspection, DTSC alleged that the groundwater monitoring system at the old pond site was deficient and needed to be upgraded. PG&E disagreed that the groundwater monitoring system needed to be upgraded at that time and proposed to upgrade the groundwater monitoring system if soil analysis demonstrated that the ponds had leaked. After some discussion, DTSC agreed to PG&E's proposed approach and an agreement was reached on the events that would trigger upgrading the groundwater monitoring system. This agreement was set forth in a Stipulation and Order (Docket No. HWCA 87/88-018), issued by DTSC on March 9, 1988. In September 1989, DTSC issued a Report of Violation. This report listed essentially the same groundwater monitoring violations settled by the Stipulation and Order. On February 25, 1991, DTSC issued a Corrective Action Order again listing the same alleged violations contained in the previous Report of Violation and the Stipulation and Order. Subsequently, in a meeting between DTSC and PG&E held on June 6, 1991, an agreement was reached on actions to be taken that would resolve the issues raised by the Corrective Action Order and previous documents. These actions included the installation of several new groundwater monitoring wells at the Topock old pond site. At the June 6, 1991 meeting, PG&E proposed to constuct a fifth new surface impoundment at Topock to contain the waste from the old ponds. PG&E also explained that before permitting a new surface impoundment for waste from the old ponds, the CRRWQCB requested DTSC's concurrence that the waste in the old ponds was not hazardous.

As a result of the June 6, 1991 agreement, PG&E submitted the *Site Hydrogeological Work Plan for the Topock Compressor Station Old Evaporation Ponds* on August 16, 1991 (PG&E 1991). This work plan included the installation of three new groundwater monitoring wells (MWP–14, MWP–15, and MWP–16), the redrilling of one well (MWP–2RD), and the multiple testing of aquifers. PG&E also began working on a *Report of Waste Discharge (ROWD)* for a new surface impoundment at Topock that would contain the waste from the old ponds. This ROWD was submitted to the CRRWQCB on August 17, 1992.

In response to comments by DTSC, PG&E submitted a revised work plan on December 30, 1991, and an addendum to the revised work plan on April 7, 1992. DTSC approved the revised work plan/addendum in a letter dated May 13, 1992. In this approval letter, DTSC required PG&E to complete all field work, testing, and sampling specified in the work plan within 90 calendar days of the approval letter (except for installation of MWP–16), and submit a report addressing the results of this work within 120 calendar days of receipt of this approval letter.

On July 14, 1992, PG&E requested a two-month extension for completing the work described in the revised work plan because of drilling difficulties and environmental health stresses that were impeding the progress of work. DTSC granted the extension, and field work, testing and sampling were completed October 16, 1992. The report addressing the results of this work, *Hydrogeological Investigation Report (HIR) for the Old Evaporation Ponds at Pacific Gas and Electric Company Topock Compressor Station* (PG&E 1992a) was sent to DTSC, EPA and CRRWQCB on November 16, 1992.

DTSC's May 13, 1992, letter approving the revised work plan/addendum also granted PG&E's request to submit a water quality sampling and analysis plan within 30 days of receipt of the approval letter. On June 17, 1992, PG&E submitted the *Water Quality Sampling and Analysis Plan (WQSAP) for the Old Pond Site at Pacific Gas and Electric Company's Topock Compressor Station* (PG&E 1992b) within the 30-day time frame stipulated by DTSC. PG&E received comments on this WQSAP from DTSC in a letter dated December 23, 1992. In response to DTSC's comments, PG&E submitted a revised WQSAP February 17, 1993.

DTSC commented on the HIR in a letter dated February 22, 1993, and again at a meeting between DTSC and PG&E held on March 9, 1993, and stated its belief that there has been a release from the old evaporation ponds because of the higher-than-background-level of total dissolved solids (TDS) in downgradient monitoring well MWP–8. PG&E believes that the water chemistry of MWP–8 is being influenced by another source of water and is not a result of a release from the old ponds at the Topock Compressor Station. To substantiate this, PG&E submitted its report of analysis of the groundwater chemistry, titled *Water Quality Analysis Report Old Evaporation Ponds PG&E Topock Compressor Station*, to DTSC on June 11, 1993. In that report, PG&E presented evidence that the evaporation ponds have not impacted groundwater. In a letter dated October 4, 1993, DTSC stated it agreed that "the apparent anomalies in the groundwater samples from MWP-8 and wells are currently viewed as coming from naturally occurring sources."

In a June 30, 1992, letter, DTSC determined that the sediment and sand contained in Ponds 2, 3, and 4 were not hazardous waste and could be disposed at an appropriate disposal facility. This determination was based upon analytical data submitted by PG&E on March 2, 1992 in its report *"Analytical Data Report Sediment and Sand Samples,*

Phase 3, Evaporation Ponds, Closure of Hazardous Waste Facilities", which resulted from a waste characterization study at the evaporation ponds. However, DTSC requested that PG&E submit plans for further characterization of the waste contained in Pond 1. PG&E submitted *Statistical Re-evaluation of Analytical Data for Sediment and Sand Samples at PG&E's Old Evaporation Ponds at Topock Compressor Station* on September 1, 1992 (PG&E 1992c). In an October 2, 1992 letter, DTSC rejected PG&E's proposal to consider the four old evaporation ponds at Topock as a single waste management unit and again requested that PG&E submit a proposal for further action. In response to this request, on October 29, 1992, PG&E submitted its plan to further characterize the extent of the hot spot in Pond 1 and remove it for off-site disposal.

Before PG&E could implement its October 29, 1992 plan, DTSC sent PG&E a letter (dated February 22, 1993), concurring that the waste in all four old ponds is non-hazardous and that the four old ponds can be considered a single waste management unit.

2.2.1 Soil Sampling Plan History

The historical background of the pond subliner soil sampling plan is as follows:

The original soil sampling plan was prepared by Brown and Caldwell and was appended to the Closure Plan. On October 20, 1987, PG&E submitted a document titled *"Soil Sampling During Closure of Topock Surface Impoundments"* in response to EPA and DTSC comments regarding background soil samples and soil sampling below the liners. This document was resubmitted on April 12, 1989, and again on October 6, 1989. In a staff meeting on October 12, 1989, PG&E requested approval of the document so that

sampling could begin. DTSC responded with comments in a letter dated November 21, 1989.

DTSC's November 21, 1989 letter requested an increase in the number of subliner borings. PG&E proposed to drill six boreholes per pond, instead of the three specified in the Closure Plan which was accepted by DTSC.

A *Revised Sampling and Analysis Plan*, dated December 18, 1989, was sent to DHS and included proposed changes in the sampling program. These changes were approved by DHS in a letter dated April 30, 1990.

3.0 SITE CHARACTERISTICS

This section summarizes the environmental characteristics of the area surrounding the PG&E Topock Compressor Station, including information on climate, topography, geology, hydrology, hydrogeology, and groundwater quality. The existing and future uses of groundwater and the present land use are also outlined.

3.1 Climate

Rainfall in the area is minimal, with an annual average precipitation of 5.15 inches and a monthly average of 0.44 inches, based on records from January 1970 through October 1992. The maximum average monthly precipitation at Needles is 0.91 inches in August, while the minimum average monthly precipitation is 0.03 inches in June.

Additionally, on the basis of a record approximately 20 years long, the 100-year 24-hour precipitation event at Needles Airport is estimated to be 3.88 inches. This extreme quantity is likely to occur from summertime thunderstorms; therefore, no multiple-day accumulations of precipitation are expected in conjunction with minimal evaporation.

The Gene Pump Municipal Water District (MWD), located near the Topock Compressor Station, is used as the reference evaporation data point for the impoundments. During the period between 1963 and 1973, the Gene Pump MWD had an average minimum evaporation rate of 3.71 inches per month in January and an average maximum evaporation rate of 17.59 inches per month in July. In addition, the annual mean evaporation for the Gene Pump MWD for the reference period was 118.92 inches.

3.2 Topography

The Topock Compressor Station is in the southern portion of the Mojave Valley and the northern region of the Chemehuevi Mountains. This territory is part of the Basin and Range geomorphic province, which is characterized in general by parallel fault block mountains separated by alluvial valleys. The area surrounding the Topock facility includes the rugged Chemehuevi Mountains to the south and a dissected piedmont terrace that gradually slopes to the northeast, toward the Colorado River.

The old Topock evaporation ponds are located on a natural terrace at the northern base of the Chemehuevi Mountains. Immediately south of the ponds is the deep narrow gully of Bat Cave Wash, an ephemeral stream that originates in the Chemehuevi Mountains. The former channel of Bat Cave Wash once cut through the area where the evaporation ponds are located. In recent geologic time, the route of Bat Cave Wash just south of the

pond area shifted abruptly to the northeast through an adjacent arroyo. The down-cutting process of the present-day channel produced a 30 to 35 foot high south-facing slope that forms the terrace on which the evaporation ponds lie. (See Figure 3).

The area is composed of a series of coalescing alluvial fans (bajada) that form a gently inclined surface extending northward from the base of the mountains. The bajada is truncated to the northeast by the flood plain of the Colorado River, about 0.75 mile from the old pond site. The surface of the bajada is slightly undulatory and is dissected by north-south trending gullies (arroyos) that drain surface runoff to the Colorado River. The arroyos are a result of erosion by ephemeral streams resulting from rainstorms. Because of occasional intense precipitation events that lead to flash flooding in this area, the arroyos are deeply incised into the bajada, with vertical walls in places. They are fed by smaller, shallower gullies with gently sloping sides that serve to further dissect the bajada.

The ponds are on the bajada at an elevation of about 675 feet above sea level (asl), approximately 220 feet above the Colorado River. Ground surface elevations range from about 660 feet at the southern end to about 610 feet at the northern end. Relief within this area is on the order of about ten feet.

3.3 Site Geology

The general stratigraphic conditions beneath the Topock evaporation ponds has been determined through analysis of data collected from monitoring well boreholes.

Lithologic units encountered during previous drilling programs include the metadiorite bedrock and approximately 200 to 250 feet of sedimentary deposits. Because of the

heterogeneous nature and lateral stratigraphic changes that occur in the alluvial sediments, detailed and precise correlation of stratigraphic units between the monitoring wells is difficult. Based upon geologic mapping in the vicinity of the ponds, the sediments encountered beneath the site are interpreted to include, from oldest to youngest, the fanglomerate, older alluvial fan deposits, the Chemehuevi Formation, and younger alluvial fan deposits.

The bedrock complex encountered in the subsurface is generally similar to that exposed and mapped in the vicinity of the ponds. (See Figure 4.) The bedrock consists of dark green-to-gray, hard, slightly weathered-to-fresh metadiorite.

Overlying the bedrock complex, the basal sedimentary deposit is a fanglomerate (the coarser, consolidated rock material in the upper part of an alluvial fan). In some areas beneath the pond site, the fanglomerate includes a boulder conglomerate zone up to 30 feet thick. The conglomerate unit is composed of large metadiorite bedrock boulders in a matrix of gravel, silt, and clay.

Above the fanglomerate is an interval of alluvial fan deposits approximately 150 feet thick. These sediments are predominantly gray-to-brown, moderately well-cemented sands and gravels, with some thin layers of silt. These deposits can be observed in the steep walls of some arroyos to the north of the pond site.

The upper 50 feet (approximately) of sediments consist of unconsolidated, fine-grained sands with interbedded silt and gravel layers. These sediments represent the Chemehuevi Formation and a thin cover of recent alluvial fan deposits. During previous borehole sampling in this interval, the split-spoon sampler was fitted with a sand catcher,

but the unconsolidated texture of the sediment made it difficult to recover quality samples.

The Topock evaporation ponds are located on sedimentary deposits that fill a narrow canyon cut into bedrock. The canyon was formed by erosional down-cutting of the former route of Bat Cave Wash.

The depth to bedrock in the monitoring wells ranges from 96 feet in well MWP–7 near the northeastern end of Pond 1 to 255 feet in well MW–16, located along the axis of the canyon (Figure 3). In the up-gradient area to the south, and approximately 30 feet below the terrace where the ponds lie, the depth to bedrock is approximately 130 feet (well MWP–12). In the down-gradient areas north of the ponds, the depth to bedrock is approximately 250 feet (wells MWP–2RD and MWP–15).

Groundwater Occurrence Beneath the Site

Groundwater is found in three geologic units beneath the site. These units are, from shallowest to deepest, the older alluvium, the red fanglomerate, and the bedrock. The older alluvium and the red fanglomerate appear to comprise a single aquifer, referred to as the "upper alluvial aquifer." Regional hydrogeology and the limited information obtained from re-drilling MWP–2RD indicates that the principal source of groundwater in the bedrock available to wells is in fractures or weathered zones.

The elevation of the groundwater in the upper alluvial aquifer ranges from a high of 560.7 asl in upgradient well MWP–12, located south of the ponds, to a low of 470.4 feet asl in downgradient well MWP–10. Depth to groundwater (i.e., thickness of the unsaturated zone) ranges from 98.9 feet in MWP–12 to a maximum of approximately 202.7 feet in MWP–10.

The groundwater flow direction in the alluvial section is to the north-northwest beneath the pond area, turning more to the northwest as it flows downgradient away from the site.

None of the water wells within one mile of the site are in use.

3.4 Land Use

Land within 1 mile of the site boundary includes industrial, recreational, and wildlife management uses, as summarized below:

- Industrial Use–The only industrial use in the area is associated with the Topock Compressor Station. Approximately 1 billion standard cubic feet of natural gas passes through the Topock facility each day originating from gas wells in Texas. At the plant, gas is compressed to maintain pressure in two 34-inch pipelines for ultimate transport to markets in central and northern California.
- Recreational Use–A portion of Park Moabi is located on the Colorado River approximately 0.5 mile from the site. Park Moabi is operated by San Bernardino County under a 50-year lease from the Bureau of Land Management (BLM). The park is approximately 1,050 acres.
- Wildlife Management–A portion of the Havasu National Wildlife Refuge lies within one mile of the site. The refuge, located along the Colorado River in Mohave and Yuma Counties, Arizona and San Bernardino County, California, was established in 1941 and covers approximately 41,495 acres. Established primarily for waterfowl, the refuge also supports quail, dove, and desert bighorn sheep and is considered an important wintering area for Canada geese and other waterfowl. The principal part of

the refuge extends from the upper end of the Topock Marsh southward to the head of Havasu Lake. It also includes the Bill Williams River delta area east of Parker Dam. Picnicking, boating and fishing are permitted on some parts while big game, waterfowl, quail and rabbit hunting are permitted, in season, on limited areas.

- No dwelling units exist within one mile of the site.

4.0 WASTE CHARACTERISTICS

4.1 Wastewater Characteristics

A maximum of 50,000 gallons per day and an average of 20,000 gallons per day of wastewater is generated by the Topock Compressor Station. More than 95 percent of the wastewater is cooling tower blowdown; the remainder is effluent from the oil-water separator and from facility maintenance activities. This section defines the characteristics of the wastewater.

Facility Operations

The cooling tower blowdown water contained elevated concentrations of salts (primarily sodium chloride, with lesser amounts of calcium sulfate, magnesium chloride, potassium chloride, and sodium carbonate), chromium (residual after treatment to remove chromium). Approximately five percent of waste streams came from facility maintenance activities and drainage of the closed cooling water system. Facility maintenance activities included equipment degreasing and descaling in which various non-hazardous, nonsolvent compounds such as sodium/potassium metasilicate and sodium/potassium hydroxide were used. The closed cooling tower water system used a non-hazardous sodium molybdate inhibitor. After 1985, chromium was no longer used

in the cooling water and was replaced by phosphate-based corrosion inhibitors and biocides.

A summary of the waste remaining in the ponds after water evaporation follows:

1. The predominant wastes (greater than 99 percent) and final characteristics of the surface impoundment solids are defined by the stable inorganic solids in the cooling tower blowdown.
2. A small amount (less than 0.02 percent) of the solids is waste lubricating oil. Metal analysis of the oil-water waste stream indicate metals are below hazardous levels defined in Title 22.
3. No more than 0.4 percent of the cooling tower blowdown solids are residual organics from treatment additives.
4. The degreasing compounds would have concentrations of 0.3 to 2.5 mg/l in the discharge (when they are used), and add about 0.0024 percent silicate and ethylene glycol derivatives to the solids remaining in the ponds. Use of the degreasing compounds will not affect the quality of the water discharged.
5. The use of acid in the descaling activities has no measurable effect on the pH of the discharge because of dilution and neutralization that occurs during the cleaning process prior to release into the surface impoundments.
6. Corrosion inhibitors in the closed cooling system water add less than 0.002 percent of the total annual accumulated solids and do not affect the overall characteristics of the solids.
7. Greater than 99 percent of stable inorganic salts (e.g., NaCl, $CaSO_4$, $MgCl_2$, KCl, Na_2CO_3, and some SiO_2) will remain.

8. Some decomposition of lubricating oil and the organics used in cooling tower water treatment can be expected. Their impact on solids is considered negligible since they add less than 0.5 percent to the non-toxic inorganic salts in the pond. The period of decomposition would depend on biological activity or other external factors. Normally, the lubricating oil and other organic wastes would remain virtually unaltered for many months. This small quantity of oil will be absorbed on the inorganic salts in the surface impoundments and, therefore, have no effect on the surface impoundment liners. (PG&E 1993)

4.2 Waste Contained in the Old Ponds

Wastewater Analysis

Wastewater samples were collected from Ponds 2, 3, and 4 from October 1984 through December 1987 during their active life. There is no available data on wastewater samples collected from Pond 1. Samples from the other ponds were analyzed for general minerals, oil and grease, and metals. (See PG&E 1993 for details). A summary follows:

The pond wastewater contained high concentrations of sodium, from 6,900 to 15,800 mg/l, chlorides from 8,160 to 20,300 mg/l, sulfate from 3,150 to 7,700 mg/l, specific conductance from 27,300 to 57,100 μmhos, and TDS from 19,300 to 46,000 mg/l. The pond water is classified as saline, based on TDS values. The water contained relatively lower concentrations of calcium, from 475 to 1240 mg/l, magnesium from 25 to 50 mg/l, potassium from 130 to 300 mg/l, fluoride from 25 to 53 mg/l, bicarbonate from <1.2 to 49 mg/l, carbonate from 48 to 96 mg/l, nitrate (as NO_3) from <0.44 to 39 mg/l, total phosphate at 12 mg/l, and hexavalent chromium from <0.1 to 6 mg/l. Minor constituents included arsenic from <0.023 to 0.18 mg/l, barium from 1 to 2.3 mg/l,

chromium from <0.2 to 25 mg/l, copper from <0.2 to 0.18 mg/l, iron from 0.08 to 0.43 mg/l, manganese from <0.01 to 0.03 mg/l, selenium from <0.1 to 0.16 mg/l, silver from 0.02 to 0.11 mg/l, and zinc from <0.01 to 0.51 mg/l. Constituents that were not detectable included antimony, beryllium, cadmium, cobalt, lead, mercury, molybdenum (<1.0 mg/l), nickel, thallium and vanadium (<2.3 mg/l). The ponds are generally alkaline with pH values from 7.7 to 9.3, and low levels of surfactants (0.16 to 0.24 mg/l) and oil and grease (<8 to 10 mg/l), (PG&E 1993).

Pond Sludge and Sand Analysis

To determine the characteristics of the waste contained in the old ponds, their sludge and sand layers were sampled on four occasions (April 1990, August 1990, October 1991, and December 1991) for CCR Title 22 fluoride and metals (including antimony, arsenic, barium, beryllium, cadmium, chromium [VI], chromium [III], cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc). Analysis included determining the total concentrations (Total Threshold Limit Concentration or TTLC), and where appropriate, the soluble concentrations of metals and fluoride using both the Waste Extraction Test (WET) and the Toxicity Characteristics Leaching Procedure (TCLP).

Six locations in each of the four old evaporation ponds were sampled. A total of 28 sediment layers, 18 sand layers, and 17 composite samples were collected and analyzed. These results were presented in the *Analytical Data Report, Sediment and Sand Samples, Phase 3, Evaporation Ponds, Closure of Hazardous Waste Management Facilities, PG&E Topock Compressor Station*, which was submitted to the DTSC and to the Colorado River Basin CRRWQCB on March 2, 1992. Summary tables are given in Appendix I. One sediment sample had a total concentration of chromium exceeding the TTLC for chromium, and two sediment samples had soluble chromium exceeding

the TCLP concentration for chromium. The samples exceeding the TTLC and TCLP were located in one area of Old Pond 1. The predominant species of chromium in the waste is the less toxic trivalent chromium, which is virtually nonsoluble. Based on these evaluations of this data, and information presented in the report - *Statistical Re-evaluation of Analytical Data for Sediment and Sand Samples at PG&E's Old Evaporation Ponds at Topock Compressor Station*, PG&E, 1992 - DTSC determined that the sediment and sand contained in the ponds are not hazardous waste and can be disposed at an appropriate disposal facility.

Physical Analysis. In a previous investigation, physical analyses (moisture content and permeability) were performed on soil samples from monitoring wells - MWP–14, MWP–15, and MWP–16 by Cooper Testing Laboratory. Moisture contents ranged between 1.1 percent and 9.9 percent. One permeability analysis was run, yielding a value of 4×10^{-5} centimeters per second (PG&E 1993).

5.0 DESIGN AND CONSTRUCTION OF SURFACE IMPOUNDMENTS

5.1 Surface Impoundment Design Specifications

The four old wastewater evaporation ponds near PG&E's compressor station at Topock are shown on Figure 3. Pond construction began in 1972, but only Pond 1 was lined in the first year. Ponds 2, 3, and 4 were lined in 1974. When Ponds 2, 3, and 4 were lined, a resistivity grid system was added around Pond 1 and installed under and around Ponds 2, 3, and 4. PG&E drawings and construction specifications are presented in Appendix II. The following is a summary of the procedures followed during the construction of the ponds:

1. Vegetation was removed by grubbing.
2. Layers of fill 6- to 8-inches deep were created to form the pond berms and fill the low spots under Pond 1. The fill, which was usually from pond excavation material, was inspected to make sure it was free of vegetation and rocks larger than five inches.
3. To obtain maximum density before compaction, 30 to 45 gallons of water (supplied by the Topock Compressor Station) was uniformly distributed over every cubic yard of fill.
4. Each layer was either: a) compacted to a density of at least 90 percent Standard Proctor, or b) compressed by passing a bulldozer (D6 or larger) over four times, or c) passing a 30-ton (minimum) rubber-tired compactor over three times, or d) by passing a 20-ton (minimum equivalent rating) vibratory compactor twice.
5. A layer of sand at least 4 inches thick was carefully placed in the pond to protect the liner. Sand, which was obtained near the Colorado River 4.5 miles from the ponds, was screened through 0.25-inch mesh screens, and the sand layer was smooth and free of sharp objects.
6. A 20-mil PVC plastic membrane was laid on the sand bed.
7. A one foot layer of Colorado River sand was laid over the PVC liner for physical protection, as well as protection from the sun.
8. The pond berms received a coating of MC–70 asphalt at 77 - 87°C. The pond was spray-coated at a rate of 1 gallon per square yard on the inside sloping surface of the berm for a distance of 10 feet from the crest towards the bottom of the pond. This layer was provided for wave erosion protection over the sand cover.

9. Inlet structures were installed under the pond berms from the east side and penetrated the liner through the pond bottom. The penetration received a double boot of the liner material, which was secured and sealed to the discharge pipe. A staff gauge was also installed near the inlet to establish a permanent depth of water marker. This gauge was secured below the liner and its penetration received a double boot of the liner material secured and sealed to the gauge (PG&E 1993).

6.0 CLOSURE PERFORMANCE STANDARDS

PG&E is attempting to achieve clean closure of the ponds. To meet DTSC and EPA requirements, PG&E was required to demonstrate the following:

1. All sludge, liner soil cover and liner material were removed from the ponds; and
2. The underlying soil was not contaminated by the pond, or if it became contaminated, that sufficient removal and decontamination had occurred so no further action was necessary to comply with the RCRA definition of a clean closure.

Thus, the DTSC and EPA are requiring PG&E to demonstrate that sufficient removal and decontamination has occurred so no further action will be required for compliance with RCRA's clean closure definition.

6.1 Soil Closure Performance Standards For Constituents of Concern

The Closure Plan specifies that all waste within the ponds must be removed. The native soil beneath the ponds must be analytically tested to determine if it contains constituents of concern that have leaked from the ponds. The Closure Plan states that concentrations of these constituents of concern must be:

a) less than or equal to background soil levels plus three standard deviations, for inorganic compounds.

To determine background standards, soil samples from four background borings were analyzed to determine the natural background concentrations of the constituents of concern. The results of these analyses and the closure performance standards calculated from them are given in the Report prepared by Mittelhauser Corporation for PG&E entitled *"Analytical Data Report Sediment and Sand Samples - Phase 3, Evaporation Ponds"*, dated February 1992.

6.2 Groundwater Closure Performance Standards

Groundwater issues are discussed in the PG&E report entitled *"Water Quality Analyses Report Old Evaporation Ponds, PG&E Topock Compressor Station"*, dated June 11, 1993. In that report, PG&E presented evidence that the evaporation ponds have not impacted groundwater. In a letter dated October 4, 1993, DTSC stated that, "the apparent anomalies in the groundwater samples from MWP-8 and other wells are currently viewed as coming from naturally occurring sources." Groundwater issues will not be discussed further in this report.

7.0 CLOSURE PROCEDURES

The field procedures that were implemented to close the RCRA ponds are described in this section. All of the pond sludge, liner soil cover, liner and aboveground piping were removed from the ponds and were disposed in compliance with Federal and State regulations. Allwaste, Inc., PG&E's remediation contractor, conducted the closure work from late September through early November 1993.

The field procedures that were implemented to complete the clean closure of the evaporation ponds are outlined in the following subsections. Closure procedures for each pond included the following operations:

1. Piping system testing;
2. Removal and disposal of residual sludge and liner cover soil;
3. Removal and disposal of pond liners and aboveground piping;
4. Inspection of pond liners and subliner soil by a registered civil engineer;
5. Sampling and analytical characterization of subliner soils;
6. Regrading the ponds; and
7. Pond revegetation

The following sections describe closure activities for each operation.

7.1 Piping System Testing

The pond wastewater influent pipe spans Bat Cave Wash and connects the former ponds to the compressor station wastewater system. The PVC pipe is 1500 feet long, has a three inch diameter, and is designated as pipe "G" in Table 4 of the Closure Plan. In accordance with Closure Plan specifications, PG&E conducted a pressure test to evaluate if the pipe had leaked. The liquids in the pipeline were tested to evaluate if chromium was present in the pipe.

The pipe was tested at 38 psig to determine if the pipe leaked, according to the Closure Plan. The pipeline was tested for 16 hours to verify the results. The closure plan called for the pipe to be tested for fifteen minutes. The pressure remained steady and there

was only a minimal pressure drop over the 16 hour period. The results of this testing demonstrate that the pipeline has not leaked. The test water was collected in a vacuum truck and used for dust control inside the ponds. The pipe was then capped at each end.

In addition, approximately 200 feet of aboveground piping was removed. The pipe had been used for an approved, emergency discharge of Class II wastewater into the ponds in 1991. The pipe was disposed at a Class III facility.

Since this wastewater piping has previously handled hazardous wastewater, a sample was taken of the pressure test water, which had been pumped into the pipe. The sample was tested for total chromium using Method 200.7. The laboratory detection limit was 0.01 mg/l. Results indicated that total chromium was non-detectable. Details of the pipe testing are presented in the accompanying Allwaste, Inc. report titled *Evaporation Pond Closure Report, PG&E Topock Gas Compressor Station* (1993). Since the wastewater analysis showed that the chromium concentration was less than the 0.05 mg/1 closure standard, and the pipeline was not leaking, the piping system was considered clean closed in accordance with the Closure Plan criteria.

7.2 Removal and Disposal of Residual Sludge and Liner Cover Sand from the Ponds

The following is a description of the excavation and disposal work performed by Allwaste, Inc.

All sludge, liner cover sand, liners and some clean subliner sand was removed and disposed at appropriate facilities. Allwaste, Inc. excavated approximately 8500 cubic yards of pond sludge, liner cover sand, and some clean sand from under the liner. Results of previous testing indicated that the sludge was a non-hazardous designated

waste and that the sand, overall, was an inert solid waste. The sludge and soil were removed using a rubber tired front-end loader and a D-4 track-mounted bulldozer. All excavations were made in as neat and clean a manner as possible. All of the excavated pond waste was stockpiled inside of the ponds, or transported directly off-site to the designated facility. All bills of lading were signed by PG&E's on-site construction inspector.

In Ponds 2, 3 and 4 the sludge, liner cover sand, liner and approximately one to three inches of clean sand underlying the liner was removed and shipped to the USPCI Class I hazardous waste disposal facility in Beatty, Nevada. The sludge and three inches of liner cover sand in Pond 1 were removed and also disposed at this Class I facility. A total of 5,500 cubic yards of sludge, sand, liner and asphalt protection cover was shipped to this Class I facility. The remaining liner cover sand and liner from Pond 1 was removed and disposed at the Laidlaw Lake Havasu Class III facility. Some sand from the side slopes of the other ponds was also disposed at this Class III facility. A total of 3,000 cubic yards of sand was disposed at the Lake Havasu facility. The berm soil which was situated above the pond freeboard line was not removed, but was used to fill and regrade the ponds. Approximately 200 feet of aboveground PVC pipe was removed and disposed at the Lake Havasu Class III facility. All asphalt slope protection material was shipped to the Class I facility.

At the beginning of excavation activities, Ponds 2, 3, and 4 contained significant amounts of water. These three ponds received emergency wastewater discharges in 1990. Pond 1 did not receive any wastewater after closure and was found to be dry during excavation. First the salt crust in each pond was broken up to enhance evaporation. In Pond 3, which had the thickest salt crust, two thousand gallons of water were removed by a vacuum truck and lightly sprayed back onto the dry inside slope of

the same pond. The salt crust in Ponds 2 and 4 was not as thick, and less water was present in these ponds. Thus they were not drained. A strip was cut down the center of the pond sludge, by the bulldozer, to allow the free water to accumulate in the shallow cut, in the wet ponds. This excess water was left to evaporate after the salt crust was broken up. Excess water was also soaked up when dry material from the pond sides was mixed in. Pond 1 was found to be dry. It had less salt crust and sludge than the other ponds. Historically, Ponds 2, 3 and 4 received more wastewater discharge than Pond 1 did, according to plant personnel. Although more water was found in the ponds than expected, PG&E decided to go ahead with closure construction activities to maintain the schedule to meet the DTSC deadline.

During the initial phases of the sludge removal process, it was discovered that oil from the spray-on asphalt sideslope protective coating had evidently leached out and permeated much of the liner-cover sand on the bottom of Ponds 2, 3, and 4. The oil was observed at the toe of the side slopes and appeared to have drained out of the bottom edge of the asphalt layer, into the sand on the bottom of the pond. (See photo in Appendix V). Most of the sand at the bottom of Ponds 2, 3 and 4 contained oil. An oily sheen was also observed in some of the free water that had accumulated in the sludge during the evaporation enhancement activities.

A sample of sand that was heavily contaminated with oil, was collected to evaluate disposal options for the sand. This sampling plan was designed to collect a worst case sample. The sample obtained was sent to Twining Laboratories. Details are given in the Allwaste, Inc. report. Results of the heavily oil-saturated sand analysis indicated the following: Total Recoverable Petroleum Hydrocarbons (TRPH) - 85,000 mg/kg; 2-Methyl naphthalene - 13 mg/kg; and Naphthalene - 51 mg/kg. The following EPA method tests were run - 8080, 8270, 8240, and 418.1. Results of all the other analysis,

(except the aforementioned results), were non-detectable. Results are presented in Appendix III.

Results of previous analytical testing (Mittelhauser 1992) of the pond liner cover sand had indicated that, overall, the sand was suitable for disposal at an appropriate Class III facility. However the oil concentrations made the sand unsuitable for disposal at a Class III facility. The liner cover sand from Ponds 2, 3, and 4 was thus transported to the Class I facility at Beatty, Nevada. The asphalt protective layer was removed and transported to the Class I facility.

The side slope berm soil had been protected from contact with the sludge by the asphalt coating. Once the asphalt was removed, the side slope liner cover sand was found to have no visible signs of oil staining where it had been in intermittent contact with the pond water, up to the freeboard line in the ponds. This material was transported to the Lake Havasu Class III landfill.

In Pond 1, the liner cover sand did not contain any oily material as seen in the other three ponds. Pond 1 was built two years before the other three ponds, and consequently may have received a different asphalt side slope coating material. Following removal of the sludge layer in Pond 1, the liner cover sand was found to be visually clean of oil. Results of previous analyses indicated it could be disposed at the Lake Havasu Class III facility.

Photos of pond closure activities are shown in Appendix V.

7.3 Removal and Disposal of Pond Liners

The liners in Ponds 2, 3 and 4 were removed and stockpiled for transport to a Class I hazardous waste disposal facility. The liners were mixed with oil-stained sand and the clean liner sections could not be economically separated from the oily sand by the contractor. Therefore, these liners were transported to the Class I facility. This process also reduced laboratory analytical costs associated with testing the liners. This procedure was a deviation from the Closure Plan.

Oil contamination was not found in Pond 1. Thus the liner from Pond 1 was not contaminated with oil and was acceptable for disposal at a Class III landfill. In order to determine the appropriate disposal facility for the Pond 1 liner, four samples were collected of the in-place liner and submitted for analysis per the Closure Plan. The locations were chosen by the same random sampling process as the boreholes - as detailed in Section 7.5.1. Locations are shown on Figure 5. Results of analysis indicated that the liners were suitable for disposal at a Class III facility. Results are given in Appendix III.

7.4 Inspection of Pond Liners and Subliner Soils

After removing the sludge and most of the liner cover sand in the ponds, Allwaste, Inc. removed liners as follows:

The liner and a layer of subliner sand was rolled back by the D4 bulldozer. The bulldozer operator lifted the liner with the blade and typically moved one or two inches of clean underlying sand along with the liner. Multiple passes were needed to remove the liner. During the process, occasional wet liner cover sand would spill around the edges of the bulldozer blade. All spilled material was cleaned up.

Michael E. Heckathorn, Registered Civil Engineer from Trident Environmental, inspected the liners and subliner soil. Phillip C. Watson, Registered Geologist from PG&E, was also present. Some of the liners and subliner soil were also inspected by Fred Zanoria and Eduardo Vallesteros of DTSC during their visits to the site. The liners were examined from the bottom as they were pulled up. This was done because sand and/or oil obscured the examination of the top of the liners. The bottoms of the liners were cleaner than the top and thus easier to examine. The liners were examined for any breaches in integrity, environmental stress cracks, and general elasticity. An examination for wet conditions, as well as discoloration and weathering of the subliner soil was made to evaluate if contamination was present. To differentiate a pond leak from condensation or water seepage from liner removal, weathering and discoloration of subliner soils were used as indicators. Possible areas of contamination, as evidenced by discolored soil, wetness, and weathering, were noted during examination of subliner soils so that confirmation borings could be drilled at these locations. (See Table 1 and Figure 6).

7.4.1 Liner Inspection Results

Results of the liner inspection indicate the following. The 20 mil PVC pond liners were examined and found to be in excellent condition even though they were approximately twenty years old. No punctures, rips or environmental stress cracks were found in the liners during the investigation. The PVC material, when examined in the field appeared to exhibit reasonable puncture resistance, elasticity, tensile strength and other physical properties. Samples of the liner seams were examined and found to be in very good condition. The liner did not shred during its removal, as do many old liners when removed, further attesting to its integrity.

7.4.2 Results of Subliner Sand and Native Soil Inspection

The examination of the subliner sand and native soil indicated the following. The sand cushion layer under the liner was not uniform in thickness as it was used to level out the rough cut surface made in the very rocky native soils. In many places, the sand below the liner would be six to eight inches thick, and in other places it was less thick.

Moisture content in the subliner sand ranged from damp to wet. Generally, the subliner sand was at least damp. Damp conditions under the PVC liner are to be expected. The liner prevents evaporation of water in the subliner soils. When water is present in the ponds, the water evaporation provides a cool spot on the land's surface. Thus soil moisture in the vadose zone tends to condense on the bottom side of the liner, trapping moisture under the liner.

In addition to natural condensation, some water had leaked onto the subliner soil during liner removal. Even after the contractor's dewatering efforts, Ponds 2, 3 and 4 still contained saturated sludge and sand. The pond brine water was difficult to evaporate. During excavation of the sludge, the contractor inadvertently ripped the PVC liners in a few different locations. Although, care was taken to avoid damage to the liners, the combination of heavy equipment, a 20 mil liner and muddy conditions on the liner surface resulted in some rips. Because water was still present in the sludge and soil at the time of removal, some pond water undoubtedly came into contact with the subliner soil. When an accidental rip was observed by the supervising engineer, the engineer examined the subsoil to ascertain if sludge or water had leaked there. Also since the liner was removed in sections, water leaked out of the saturated sand that remained on top of the liner, onto surrounding soil. Spilled material was removed as soon as

possible, resulting in some clean subliner sand being removed. A thin layer of clean subliner sand was also removed when the liner was pulled up by the bulldozer.

Observations of the subliner wet areas are presented in Table 1. Photos of the Wet Spots are shown in Appendix V. Many of these wet spots did not show discoloration or weathering and may be due to condensation or pond water leakage during liner removal. Nevertheless, wet spots were further investigated during the soil characterization program.

Pond 1 was not used since October of 1988 and consequently was found to be completely dry. (The other ponds received a one-time emergency discharge in the fall of 1990.) In Pond 1, only two wet areas were found under the liner.

Ponds 2 and 4 each contained one small wet area which showed indications of weathering. In Pond 2, the subliner area designated as Wet Spot 2-A (Boring P2-5) had discoloration that was similar to the gray to black color that was found in the liner cover sand. Iron oxide discoloration was also present in the subliner sand. Wet Spot 4-B (Boring 4 - 7) in Pond 4 was also streaked with iron oxide stains. These iron oxide stains were similar to those found in the liner cover sand. The top of the subliner native soil at both of these locations contained a black sandy clay-like layer one to two inches deep. To ascertain if these Wet Spots were due to pond leakage an evaluation was made of the sample results for the borings made at these two Wet Spots. Results of analyses indicate that metals concentrations in these two borings were all below background except in a few instances where background was marginally exceeded.

7.5 Sampling and Analytical Characterization of Subliner Soils

Subliner soil in the ponds was characterized to determine if they were impacted by pond leakage. After completing the examination of the liners and subliner soils, the subliner soil characterization activities began. The objectives of the subliner soil characterization were as follows: The contractor collected and analyzed subliner soil samples. These results were compared to analytical results for background soil samples collected from four borings, previously drilled outside of the ponds. The subliner soil sample chemical results were also compared to the pond sludge and liner cover sand chemical results. The following is a description of the subliner soil characterization:

7.5.1 Borehole Location Selection

The Closure Plan specified that six randomly located borings be drilled in each pond. To select the six locations, the Closure Plan called for the pond to be divided into three areas with two boreholes per area. However, PG&E determined that it would be more representative to divide each pond into six rectangular areas of nearly equal size and randomly select one borehole in each rectangular area. This was a deviation from the Closure Plan. To randomly select a borehole, a grid was established in each of the six areas. "X" and "Y" coordinate random number pairs (1 to 100) were then generated using a personal computer statistical program, to place the boring locations within the grid. The six boring locations were staked to mark their locations in each pond. The boring locations were then mapped (See Figure 6). This process used a topographic map with 2-foot contours for defining the area of each pond. The boring locations were subsequently surveyed by a California Registered Surveyor to ascertain their exact location.

After the random boring locations were staked, the locations of the "Wet Spots", noted during the subliner investigation, were also staked. If a random boring location was near a Wet Spot, the random boring was used to evaluate that particular Wet Spot (borings P1-2, P2-2, P2-6, P3-6 and P4-1). If they did not coincide, an additional boring was drilled at the Wet Spot (P1-7, P2-5 (boring was numbered out of sequence) and P4-7). This resulted in one additional boring being placed in Ponds 1, 2, and 4 to investigate the Wet Spots. In Pond 1, two wet spots were investigated, since the pond was dry and did not contain free water. Examination results for Pond 3 indicated that signs of leakage were not present. Thus only the six borings previously slated for that pond were drilled.

7.5.2 Drilling and Sampling Program

A summary of the drilling and sampling program follows. Details are presented in the accompanying report by Allwaste, Inc. (1993).

Twining Laboratories, Inc. was subcontracted by Allwaste, Inc. to perform all drilling, sampling, and chemical analyses work for this investigation. The program was conducted in accordance with PG&E's December 18, 1989 *Sampling and Analysis Plan*, (approved by DTSC in an April 30, 1990 letter), and in accordance with subsequent communications with DTSC.

Twining Laboratories drilled twenty-seven 25-foot deep borings using a CME 25 drill rig with eight-inch nominal O.D. hollow-stem augers. Eight samples per borehole were collected at depths of 1, 3, 5, 7, 10, 15, 20, and 25 feet. The samples were collected by driving a Standard Pin sampler containing brass tubes through the hollow-stem into the soils ahead of the lead auger. The borings were logged by Ken Rank under the

supervision of Clay Rudgers, Registered Geologist #4568, Certified Engineering Geologist #1794. Both worked for Twining Laboratories.

After recovery of the sample tube, the ends were covered with Teflon tape and sealed with plastic caps. The samples were placed in an ice chest with frozen "blue ice" and shipped or hand carried to Twining Laboratories in Fresno. Proper chain-of-custody procedures were followed.

Upon receipt of the samples, Twining analyzed the samples from the depth intervals of 1, 3, and 5 feet for Title 22, CCR metals, as well as general parameters - electrical conductivity (EC) and pH, that are listed in Table 2. The remainder of the samples were archived by Twining for a six month period pending further requests for analysis. Additional samples from several of the boreholes were analyzed for electrical conductivity (EC). These boreholes contained shallow samples with elevated EC readings.

Samples were analyzed by Twining Laboratories, Inc. which functioned as the primary State of California certified laboratory. The secondary analytical laboratory services were provided by DTSC's Laboratory. Eduardo Vallesteros of DTSC collected split samples which were analyzed at the DTSC Laboratory. This fulfilled the secondary laboratory requirement of the Closure Plan. This procedure was a deviation from the Closure Plan and was agreed to in a telephone conversation between Patricia Sullivan of PG&E and Eduardo Vallesteros of DTSC. Due to problems with achieving a low detection limit for molybdenum and antimony using method 6010, Twining used method 7481 for molybdenum and method 7041 for antimony. Additionally, Method 120.1 was used for EC rather than Method 9059. These were deviations from the Closure Plan.

Upon completion of each boring, the borehole was backfilled with a 1:1 mixture of bentonite and silica sand. This backfill material was carefully proportioned and mixed at the surface, then placed in the borehole using a tremie pipe to assure uniform sealing of the borehole.

7.6 Regrading the Ponds

After the sludge, liner soil cover, and liner were removed, and the subliner soil samples were collected, the ponds were backfilled with clean soil from the berms surrounding the ponds. PG&E decided to proceed with backfilling the ponds for the following reasons:

1. Economics:

a. Demobilizing and remobilizing the contractor to regrade the site would have been cost-prohibitive; and

b. Since the pond backfill material averages only two feet in thickness, re-excavating an area to do additional work would be relatively easy. (The soil boring locations were surveyed by a registered surveyor.)

2. Eliminated ponding of rain water: With the onset of winter, regrading the site would eliminate ponding of rainwater.

The ponds were regraded according to the plans in the attached Drawings Section. Compaction was achieved utilizing the onsite bulldozer and scrapers.

7.7 Pond Revegetation Procedures

The pond area was revegetated with native plants according to specifications provided by the U.S. Fish and Wildlife Service (USFWS).

Following is a synopsis of native plants which grow in the vicinity. The area surrounding the Topock Compressor Station is dominated by creosote bush (*Larrea tridentata*) mixed with bur sage (*Ambrosia sp.*), beavertail cactus (*Opuntia basilaris*), fishhook barrel cactus (*Mammilaria microcarpa*), and infrequent occurrences of ocotillo (*Fouquieria splendens*) and other plants. Palo verde (*Cercidium sp.*) is an important component of the plant community in Bat Cave Wash and tamarisk (*Tamarix chinensis*) is the dominant plant species in the vicinity of the Colorado River.

Revegetation procedures were as follows:

7.7.1 Seedbed Preparation

Allwaste, Inc. prepared the surface of the backfilled area to receive seed by creating conditions conducive to seedling establishment. This included ripping, chiseling or scarifying, and discing of harder areas as required to obtain a minimum of six inches of soil. This preparation helped to relieve compaction, increased permeability and optimized seed placement.

7.7.2 Seeding

PG&E notified USFWS Refuge Manager of the activities prior to seeding. The seed mixes and seeding rates discussed below were developed through consultation with the Soil Conservation Service and the applicable land-management agencies.

Allwaste, Inc. disced the area with a standard farm field disk or a pitting disk. This mixed the nutrients into the top level of soil and gave a "seat" for the seeds to collect in

without leaving the soil surface too loose to properly seat the seed. The furrows were shallow, and ran counter (at least 45 degrees) to the contours of the land.

Allwaste, Inc. hydroseeded the seed mix, following the seeding plan given below while conducting the hydroseeding work. The mulch, per acre, was a mixture of 1500 pounds of grade 'A' fiber (no paper); 200 pounds 16-20-0 fertilizer; and, 60 to 80 pounds of tackifier.

The seed mix was as follows:

Seed Mix:

lbs./ac.	Plant	Botanical
1#	Creosote Bush	Larrea tridentata
5#	Indianwheat (Plaintain)	Plantago insularis
1#	Brittle Bush	Encelia farinosa
2#	Spike Dropseed	Sporobolus contractus
2#	Fluffgrass	Erioneuron pulchellum
0.5#	Sundrops	Oenothera primiveris
1#	Bursage	Ambrosia dumosa
0.5#	Big Galleta	Hilaria rigida
1#	Ratany	Krameria sp.
1#	Bush Muhly	Muhlenbergia porteri
2#	Mixed Cholia	Opuntia sps. (echinocarpa; basilaris; versicolor; ramosissima)

No chemical weed control was used at the site. Allwaste, Inc. implemented early control for exotic weeds (russian thistle, etc.) as necessary. The seeds were watered immediately after seeding. One-half inch of water was applied over the entire seeded area using a portable irrigation piping system.

7.8 Safety Procedures

A Health and Safety (H&S) Plan conforming to specifications of 29 CFR 1910.120 by the Occupational Health and Safety Administration (OSHA), was implemented for all operations associated with the completion of this closure, even though the waste was non-hazardous. This H&S Plan was in compliance with all federal and state requirements. (See the Allwaste, Inc. 1993.) In accordance with 29 CFR 1910.120, all personnel were required to complete OSHA's health and safety training and medical monitoring.

7.9 Decontamination of Construction Equipment

Equipment utilized during the closure of the pond was decontaminated prior to leaving the site. Decontamination was done by thoroughly washing the equipment. Any hand sampling equipment, shovels, or augers used, were decontaminated by washing in a TSP soap solution prior to leaving the site. Decontamination was completed when all contaminated oil residue or soil materials were removed from the equipment by the cleaning process utilized. All the wash water was disposed at the Class I facility.

8.0 RESULTS OF SUBLINER SOIL CHEMICAL ANALYSIS

The results of analyses are presented in Table 3. Table 3 also presents the following: the pond background standards developed by Mittelhauser; the range of analytical results for the pond sludge and sand; the range of the background sample concentrations; the range of the subliner soil

concentrations; the Mittelhauser Phase I and II compressor station area background standards; and the TTLC values. Thus these values can easily be compared to each other.

Results of analyses indicate that 147 of the 1722 sample values exceeded the "pond background standards" as established by Mittelhauser. Although some parameter concentrations exceeded background standards, all were at low levels and well within the naturally occurring soil concentration range.

A comparison was also made between metals concentrations in the subliner soils and those in the pond sludge and liner cover sand, because some of the subliner soil metals concentrations exceeded the pond sludge metals concentrations. Table 3 compares the minimum and maximum parameter concentrations in the sludge/liner cover sand with the minimum and maximum values found in the subliner soils. Copies of the analytical results tables from Mittelhauser Corporation's February 1992 report entitled, *"Analytical Data Report Sediment and Sand Samples - Phase 3, Evaporation Ponds"*, are presented in Appendix I.

Results of subliner soils analyses indicate that eight of the 21 parameters tested did not have any sample values which exceeded the background standard. These include: chromium VI, fluoride, pH, antimony, cadmium, mercury, silver, and thallium. The remaining 13 parameters had one or more sample values which exceeded the background standards. These parameters are discussed below.

Five of the remaining 13 parameters, which had at least one sample result that exceeded the background standard, are barium, beryllium, lead, nickel, and selenium. A comparison was made between pond sludge, background soil standards and subliner soil concentrations for these five parameters. Results indicate that the maximum concentrations in the sludge, for each of these five parameters, were low, even less than the soil background standard concentrations. Results show

that subliner soil samples have higher concentrations of these five parameters than the sludge does. Therefore these exceedences of the background standard cannot be attributed to pond leakage. These results also show the weaknesses involved with using background standard comparisons. There are differences due to horizontal and vertical spatial variability in the soil. Additionally, some of the sample data populations are not be normally distributed. Also laboratory analytical differences may occur between samples sets that are analyzed at different laboratories. This is evident when examining the Mittelhauser duplicate sample results presented in Appendix I. Also results indicate significant variability between the pond subliner soil split sample analyses performed by Twinings Laboratories and DTSC.

Among the remaining parameters which exceeded background standards, were cobalt, copper, vanadium, and arsenic. A comparison was made between pond sludge, background soil standards, and subliner soil concentrations for these four parameters. Results indicate that the concentrations of these four parameters in the pond sludge only slightly exceeded the soil background standard in a small number of cases. Due to the low concentrations of these parameters in the sludge it is probably unlikely that the subliner soil results which exceeded background are attributable to pond leakage, rather than other factors such as laboratory and spatial variability.

Three of the remaining analytes - chromium (total), molybdenum, and zinc - had significantly elevated concentrations in the pond sludge and sand. Results of subliner soil analysis indicate that elevated levels of these metals are not present in the subliner soils and their concentrations are low. Results indicate that some sample values marginally exceeded the background standard. However, the maximum concentration of chromium in the pond sludge is 158 times greater than the soil background standard. There is a high concentration of these three parameters in the sludge. If a leak had occurred over an extended period of time, the metals concentrations in the affected subliner soil would be elevated. However results indicate they are not elevated, and only

marginally exceed the background standard. Also there is no distinct pattern of multiple elevated metals concentrations, indicative of leakage, occurring in a sample or borehole. Sample results do not show the typical metals contamination pattern of high concentrations occurring in the shallow soil and then diminishing with depth. Results indicate there is a random scattered pattern of background exceedences. This could be due to a number of causes, for example, spatial variability or laboratory differences.

Considering the quantity of chromium that was disposed in these ponds, if a leak had occurred elevated concentrations in the subliner soils would be inevitable. For comparison, results of analysis of soil affected by pipe leakage in the Phase I and Phase II closure indicate that distinctly elevated concentrations of multiple metals, including chromium, were present. For example results for soil sample PH-2, collected beneath a leaking pipe near the east sludge drying bed, showed clearly elevated concentrations for multiple metals (chromium = 510 mg/kg; zinc = 210 mg/kg; and hexavalent chromium = 1.9 mg/kg). In comparison, the pond subliner soil sample chromium results, which exceeded the 19 mg/kg background standard, have the following distribution: Thirteen samples reported concentrations between 20 - 30 mg/kg; and two samples reported concentrations between 30 - 46 mg/kg. When comparing the subliner soil chromium results (20 to 46 mg/kg), to the results of soil contaminated by chromium from the pipeline failure (PH-2 = 510 mg/kg), leakage from the ponds is not evident.

A comparison was also made of the pond subliner soil chromium results to the Phase I and II compressor station area background chromium standard of 45 mg/kg. Results indicate that all pond subliner soil samples, except one (P2-6 at 5 ft. = 46 mg/kg), are below the Phase I and II chromium background standard.

The mean background soil chromium concentration at the ponds was calculated by Mittelhauser as 7 mg/kg. Shacklette (1971) gives an average naturally occurring chromium concentration for

the Western United States as 38 mg/kg (geometric mean) with a range of 1 to 1500 mg/kg. A comparison of the pond subliner soil sample chromium results to this average of 38 mg/kg shows that only one sample (P2-6 at 5 ft. = 46 mg/kg) exceeds this average value.

The pond background standard for chromium (19 mg/kg) is less than one-half of the Phase I and II background standard (45 mg/kg) for the compressor station area (located approximately 1500 feet northeast of the ponds). These results indicate that significant variation exists in the naturally occurring soil chromium concentrations at the same facility.

Fluoride is an excellent leakage indicator parameter. Under the current groundwater monitoring program, fluoride is considered as one of the principal detection monitoring parameters because of its high concentrations in the cooling tower supply water. Fluoride concentrations were very high in the pond sludge. If there was a leak from the ponds, one would expect retention of fluoride in the subliner soil, since it contains high concentrations of calcium (up to 40,000 mg/kg to 61,000 mg/kg). With elevated calcium concentrations present in the soil, fluorite compounds would readily form. Fluoride concentrations in the subliner soil do not exceed the background standard. Thus the low concentrations of fluoride in the subliner soils are a good indication that the ponds have not leaked. (Soil analysis for calcium is presented in Appendix IV.)

Results for the last parameter, electrical conductivity (EC), indicate that shallow soil sample concentrations exceed the background standard in 18 of 27 borings. However, EC levels drop below the background standard of 2551 μS/cm at or before the 5 foot level in most borings. Some of the shallow sample EC results that exceed the background standard can be attributed to leakage of pond water from the saturated sand onto the subliner soil during liner removal.

A comparison with Pond 1 shows that this dry pond had low EC results in the shallow soil. In Pond 1, which was dry when the liner was removed, results indicate that all EC values, except

one, were below background. Thus the Pond 1 subliner soil EC concentrations were much lower than the other three Ponds, which contained standing water when closure activities began.

To further verify that the deeper samples meet the EC background standard, additional analyses were performed on deeper samples from nine borings, P2-1, P2-4, P2-5, P2-6, P2-7, P3-2, P3-6, P4-1, and P4-7. These additional analyses were performed in a progressive process where the next deeper sample was analyzed until the sample value was less than the background standard of 2551 μS/cm. Results of the analysis indicate that elevated EC levels primarily occur in the shallow soil samples (five foot or less).

In three boreholes, P2-5, P2-7 and P4-7, elevated EC levels continued to depths of 10 feet, 10 feet and 20 feet, respectively. Results of analyses indicate that elevated EC levels in these borings diminish and return to background levels in the next deeper sample. However, the metals concentrations in these boreholes are very low and do not exceed background standards, except in a few samples where they are marginally above background.

In summary, results of soil sample analyses indicate that all concentrations of the metals of concern were found at low levels. Some of the metals concentrations marginally exceeded the background standards but were well within the naturally occurring soil concentration range for these metals.. Almost all of the subliner soil samples which exceeded the pond background standards were below the background standards for the Phase I and II compressor station area closure.

These exceedences may be due to inter-laboratory analytical differences, between the laboratory used to analyze the background samples and the one used to analyze the subliner soil samples. Also spatial variation differences in the soil could account for varying metals concentrations between the subliner area and the background borings. An inspection of the pond background

boring data, (refer to Appendix I, Table 2-1), indicates that vertical stratification is occurring for some parameters in the soil. The background soil chromium concentrations exhibit this tendency. The shallow samples (1 foot) have chromium concentrations up to six times greater than the deep samples (20 and 25 foot). Some deep samples have chromium concentrations of only 1 to 2 mg/kg. This spatial variation, due to vertical stratification, has created an inconsistency in background standard comparison since the shallow subliner soil samples (1-5 foot) are being compared to results taken primarily from deep samples (10-25 foot). These shallow subliner soil samples need to be compared to similar shallow samples (1-5 foot), not to samples collected from ten to 25 foot depths which have unrepresentative chromium concentrations due to stratified conditions. Thus the comparison of vertically stratified subliner samples and background samples does not provide a good indicator of pond leakage.

Results indicate that some of the subliner soil and background soil parameters have non-normally distributed data populations. This non-normal data distribution makes comparisons to a background standard, based on a normally distributed sample population (mean plus three standard deviations) difficult. The closure plan states on page G - 8 that, "If *unexpected trends* are observed in the data, these will be taken into consideration to accomplish an environmentally sound closure." The non-normal distribution of the data and the vertical stratification of the metals concentrations in the soil are *unexpected trends* and must be considered in evaluating the results. Although scattered sample values do exceed background standards (which were calculated assuming that a normally distributed data set was present and no vertical stratification of parameters existed), these exceedences may not be indicative that leakage has occurred.

9.0 FACILITY FINANCIAL ASSURANCE

PG&E previously submitted proof of financial assurance for closing this facility in a letter to Ms. Marvel Flentoil of DTSC dated February 24, 1993.

10.0 SUMMARY AND CONCLUSIONS

A summary of closure activities, results of investigations, and conclusions is as follows:

1. The pond closure was conducted from September through November, 1993. Over 8,500 cubic yards of evaporative pond sludge, liner cover sand, and liner were removed and disposed at Class I and III landfills by Allwaste, Inc. The results of previous analytical testing for the sludge and sand indicated that it was a non-hazardous, designated waste.

2. During excavation, the 20 mil PVC pond liners were examined and found to be in excellent condition, even though they were approximately 20 years old. No punctures, rips or environmental stress cracks were found in the liners during the investigation. The PVC material, when examined in the field, appeared to exhibit reasonable puncture resistance, elasticity, tensile strength and other physical properties. Samples of the liner seams were examined and were found to be in very good condition. The liners did not shred during removal.

3. Substantial amounts of water were found in Ponds 2, 3, and 4. Nearly 2,000 gallons of water were pumped out of Pond 3. This is further evidence that the liner integrity was intact since the ponds have not been used for wastewater disposal for several years.

4. The sand layer beneath the liner was examined as the pond liner was removed. Results of the examination are as follows: Over the entire area of the four ponds, the subliner sand was very clean and was not discolored, except in two very small areas. Discolored subliner sand or soil was easy to identify in contrast to the liner cover sand which had been affected by the wastewater. The unaltered subliner sand was a natural tan color in contrast to the contaminated liner cover sand which exhibited colors ranging from black to orangish red.

5. A subsurface sampling program was conducted beneath the excavated ponds according to the approved Closure Plan. Twenty-seven borings were drilled, and 216 soil samples were collected.

6. Results of subliner soil sample analyses indicate that all of the metals concentrations were at levels that were below or near background. Some of the subliner soil sample results marginally exceeded the background standards but were well within the naturally occurring soil concentration ranges for these metals.

7. The wastewater influent pipe located between the compressor station and the ponds was pressure tested and found not to leak. A water sample was collected from the pipe and analyzed for total chromium. Results of water sample analysis indicated non-detectable levels of total chromium.

8. Based on these findings, it is recommended that the wastewater evaporation pond facility be considered to be clean closed.

11.0 INVESTIGATION LIMITATIONS

In compliance with State and Federal regulations, Trident Environmental Consultants (TEC) prepared this report as a third-party independent consultant. PG&E had supplied the only data for preparation of this report. TEC worked under the assumption that all data and reference material supplied were true and accurate, and that all relevant environmental information was disclosed to TEC during this investigation. All conclusions drawn by TEC were interpretations of the data supplied, and subject to the data's accuracy. To minimize PG&E's risk, this report was appropriately prepared in compliance with accepted procedures and practices of the industry. Although every level of effort had gone into reducing risks, potential environmental problems and a certain level of risk may still exist at any level of effort. This report is for the sole use of Pacific Gas and Electric Company and it's agents.

Physical changes to a property, from the condition at which it existed during the time our investigation was accomplished, can be brought about by natural or manmade causes. Additionally, the standards of work which are acceptable to approving agencies may be raised during the passage of time, and what is acceptable to an approving agency at this time may not be in the future.

Our services were conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, express or implied, and no warranty or guarantee is included or intended in this report. The recommendations submitted in this report are based upon information obtained from our review of published data, site reconnaissance, laboratory testing and appropriate analyses.

The services provided under this contract, as described in this report, include professional opinions and judgements based on the data collected. It is possible that variations in soil could exist between and beyond borings, monitoring wells, test pits, and exploratory trenches.

Professional judgement is the basis of many of the conclusions and recommendations contained in this report. This judgement (based on existing data provided by the client) may change as new, additional data is obtained.

It should be recognized that definition and evaluation of geologic conditions is a difficult and inexact art. Judgements leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface conditions present. More extensive studies including additional subsurface investigation can tend to reduce the inherent uncertainties associated with studies of this type.

12.0 REFERENCES CITED

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Shacklette, H.T., et.al., 1971, Elemental Composition of Surficial Materials in the Conterminous United States, Geological Survey Professional Paper 574-D.

U.S. Environmental Protection Agency, 1979, "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020.

U.S. Environmental Protection Agency, 1987, "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", SW-846, third edition.

FIGURES

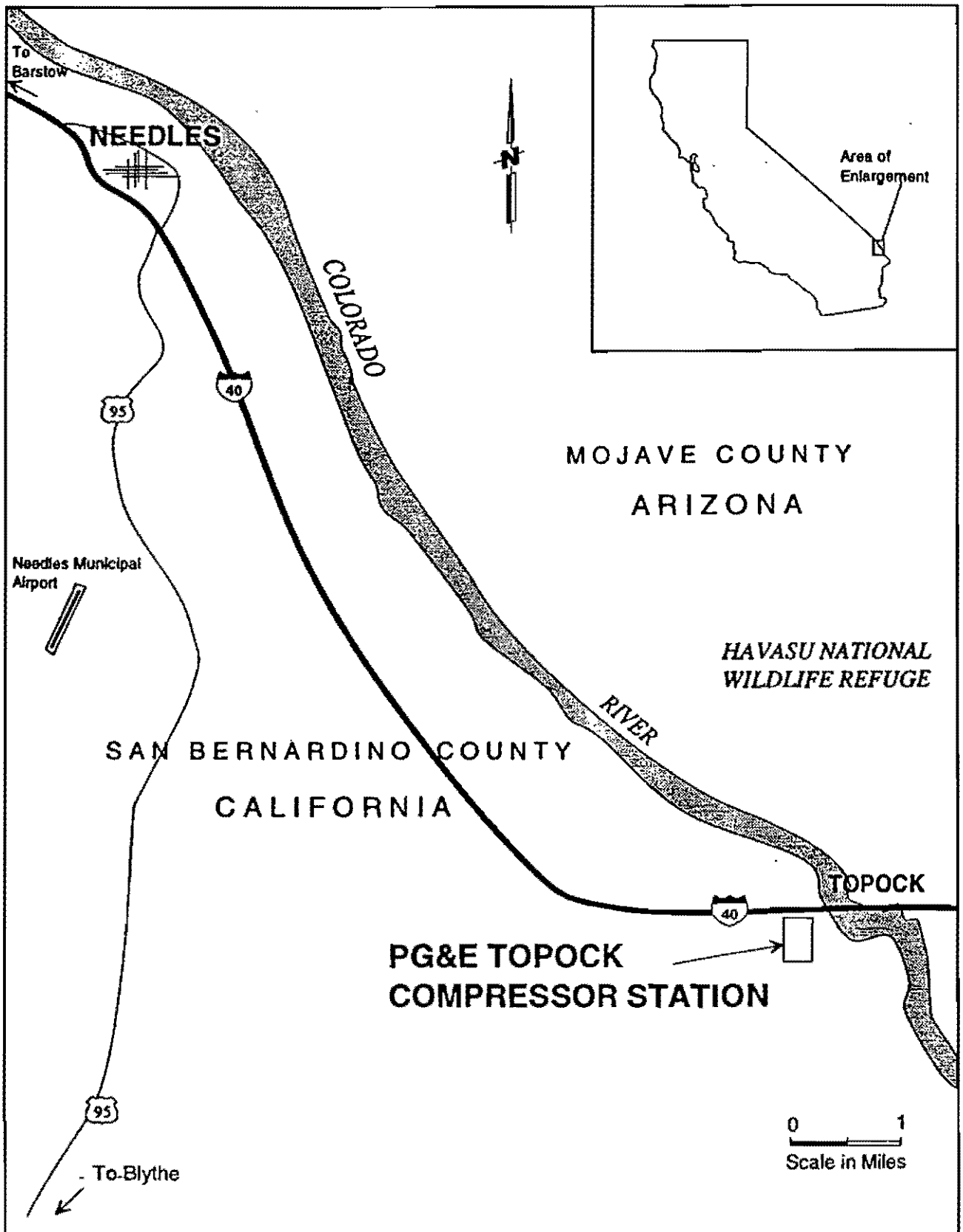
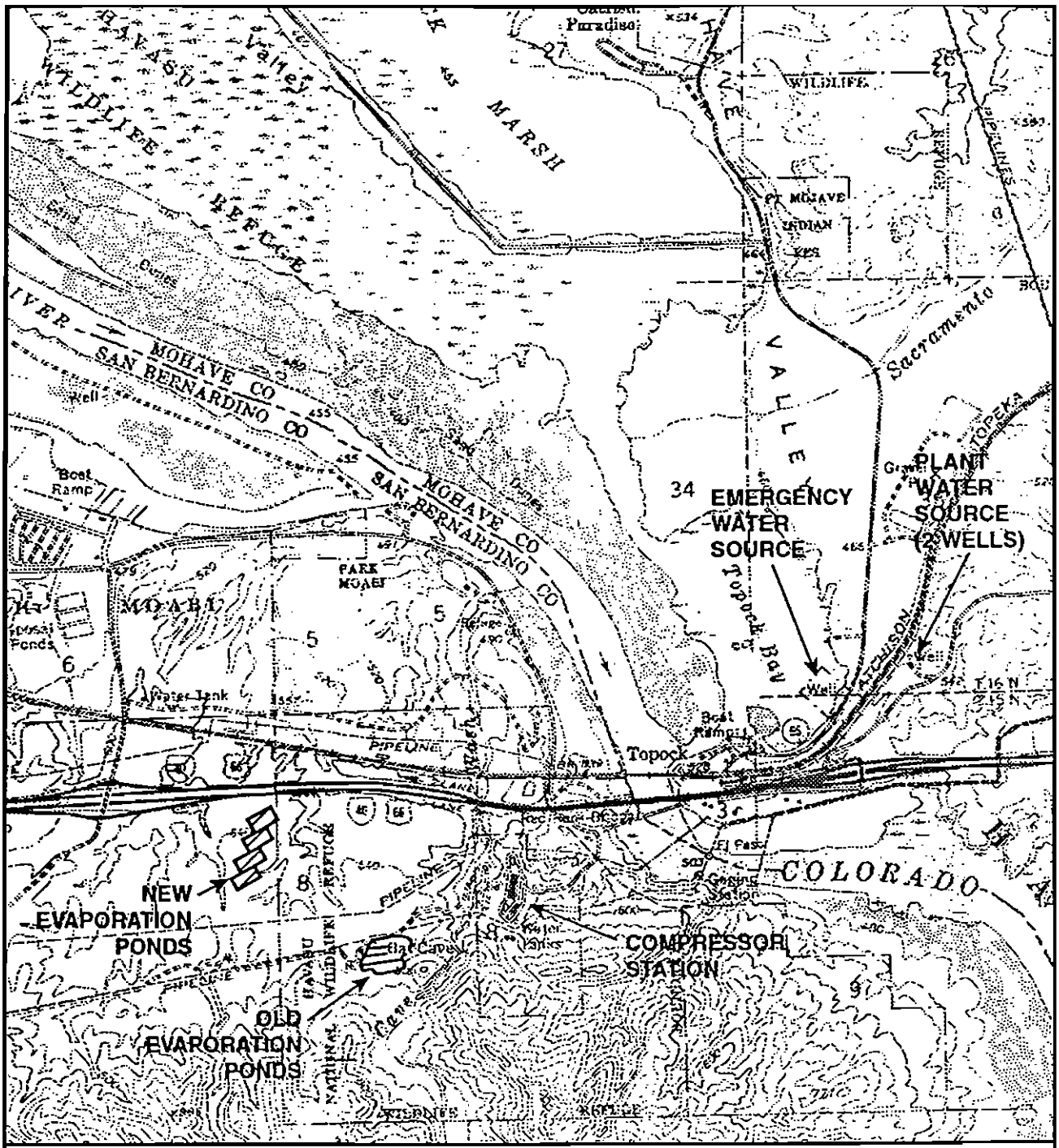


Figure 1 Location of PG&E Topock Compressor Station.

CCA-12A



Note: Base map from USGS 7-1/2 minute quadrangles: Topock Ariz. - Calif., 1970 and Whale Mtn., Calif., 1971.

0 2000 4000 feet

N

Figure 2 Location of the old pond site and the PG&E Topock Compressor Station.

Topographic map of old evaporation ponds and surrounding area.

60007462/CB/CCA12A

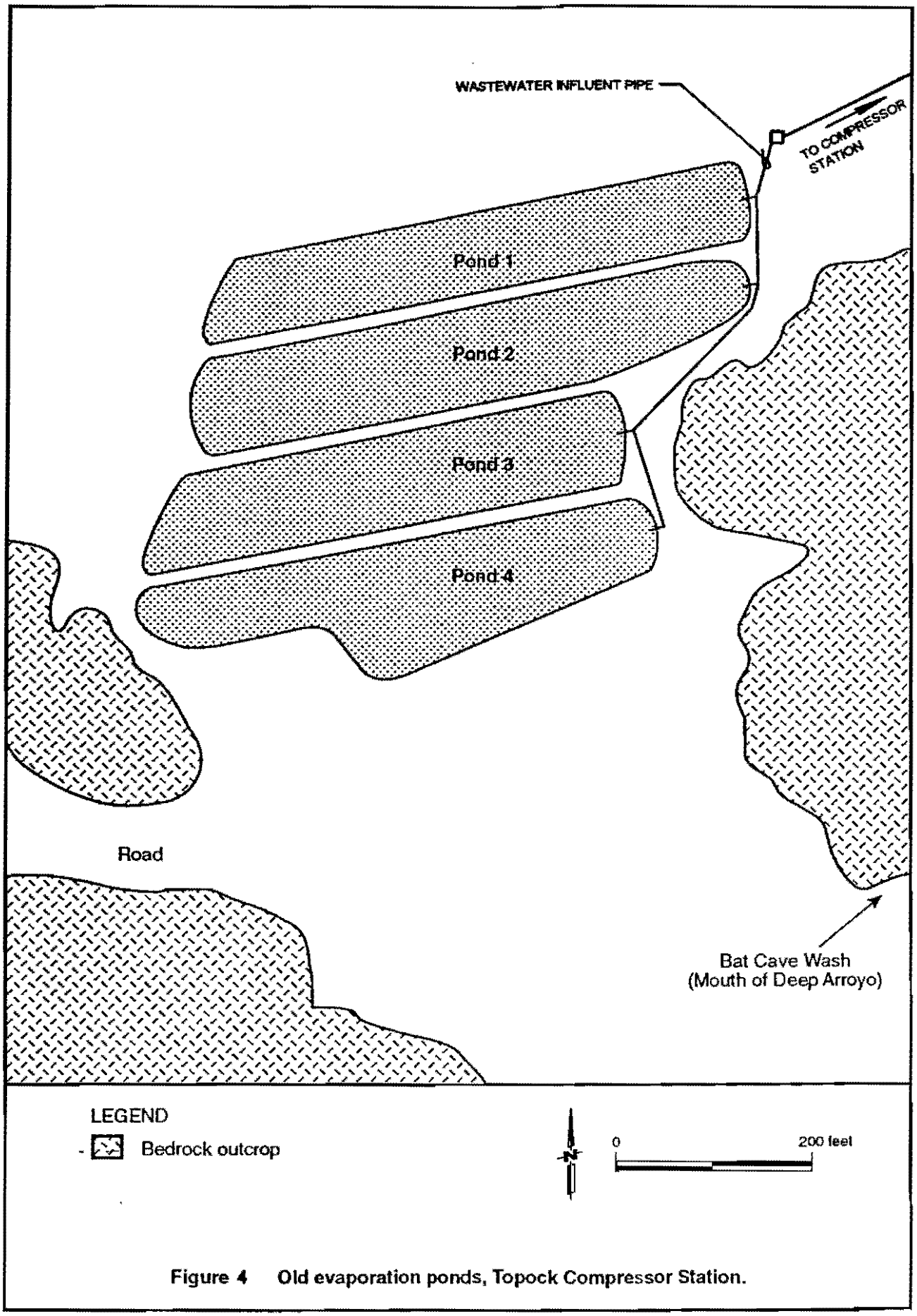


Figure 4 Old evaporation ponds, Topock Compressor Station.

60007462/CB/CCA12

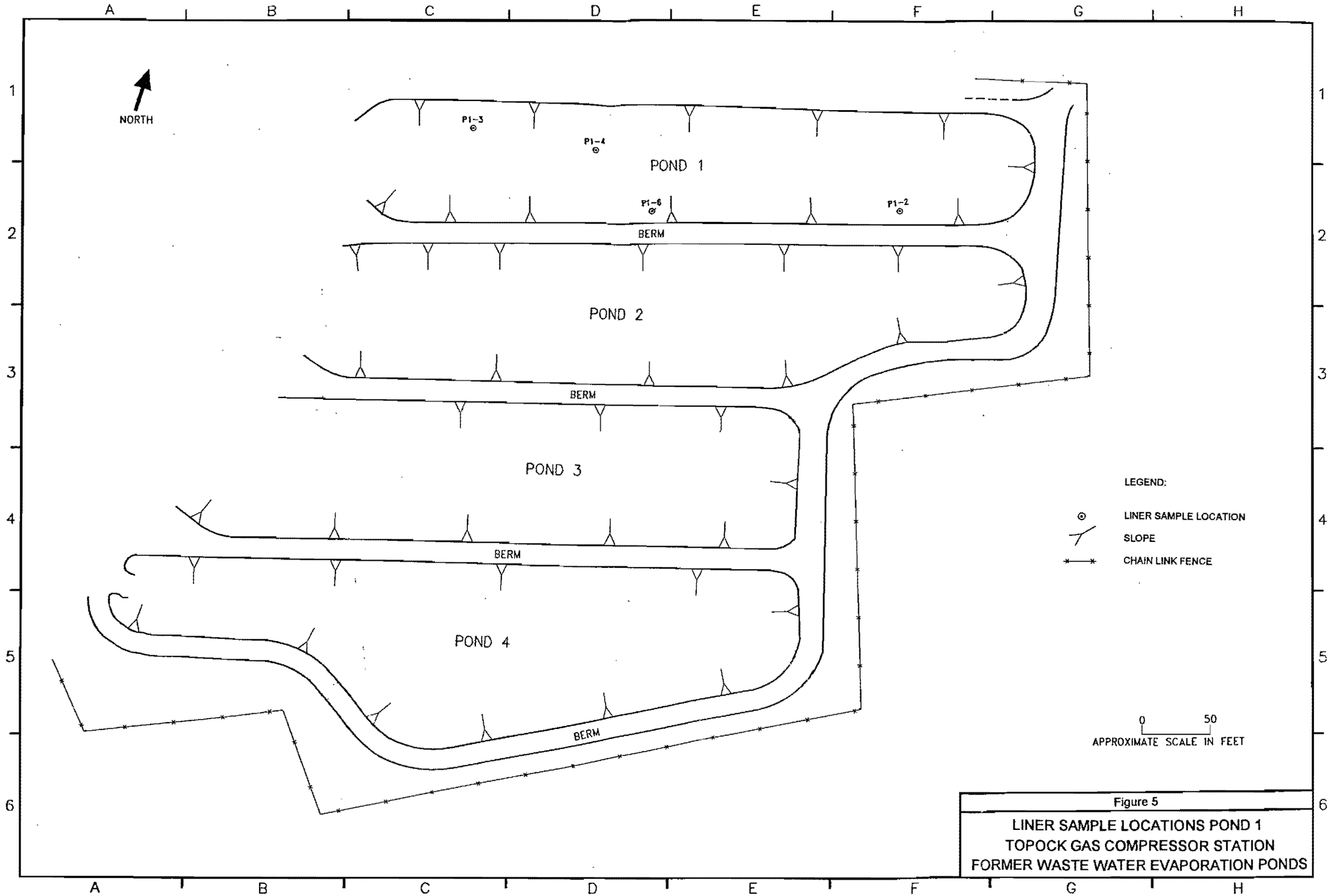
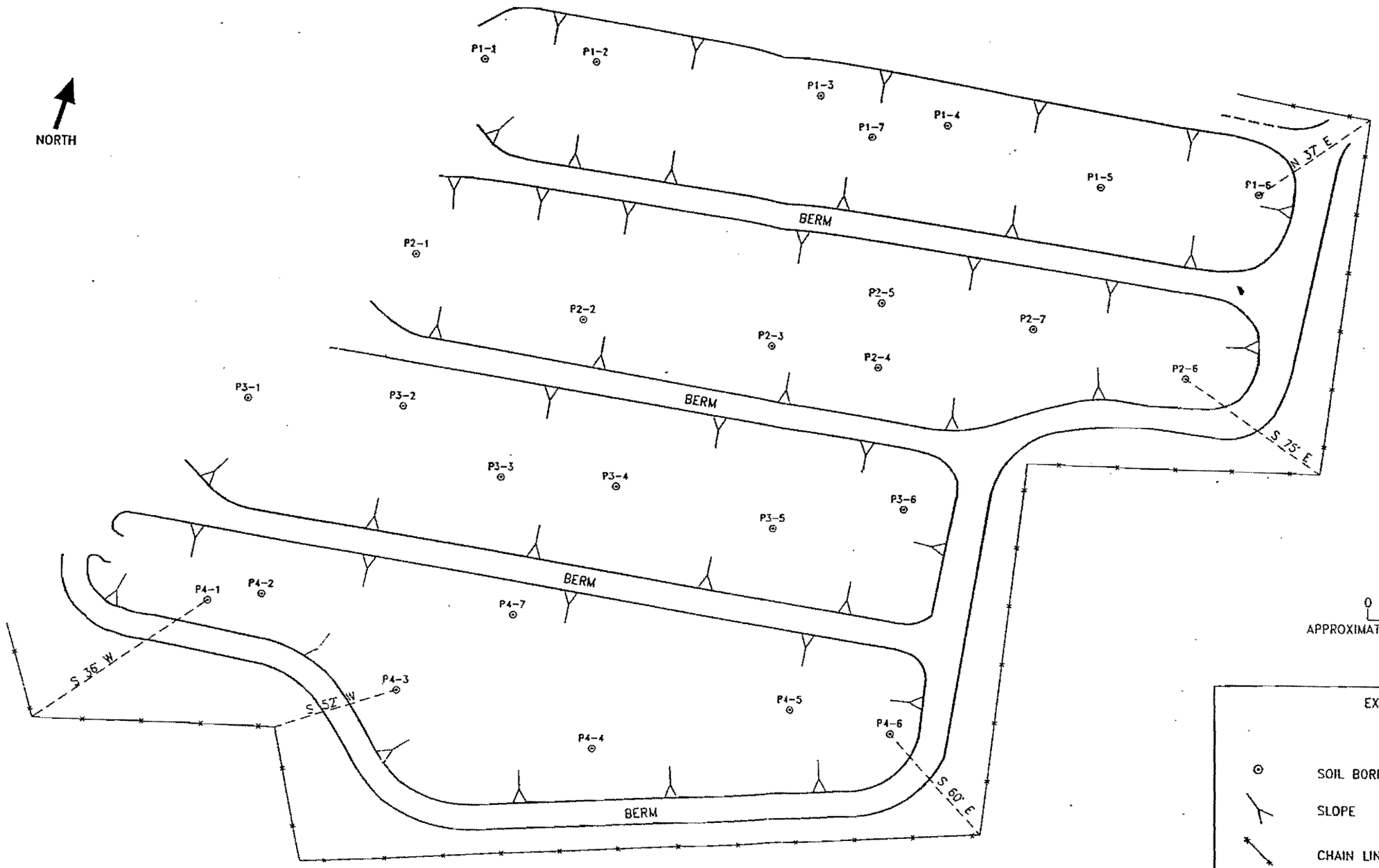


Figure 5

LINER SAMPLE LOCATIONS POND 1
TOPOCK GAS COMPRESSOR STATION
FORMER WASTE WATER EVAPORATION PONDS



EXPLANATION

- SOIL BORING LOCATION
- SLOPE
- CHAIN LINK FENCE
- S 72° E — APPROXIMATE MAGNETIC BEARING

FIGURE 6 SOIL BORING LOCATIONS

FORMER CLASS II DISPOSAL PONDS
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK GAS COMPRESSOR STATION
TOPOCK, CALIFORNIA

FILE NO.: DISPOND	DATE: 11-17-93
DRAWN BY: CMB	APPROVED BY:
PROJECT NO. 393-0189-01	DRAWING NO. 1

THE TWINING LABORATORIES, INC. EST. 1898

- FRESNO
- MODESTO
- VISALIA
- BAKERSFIELD

TABLES

TABLE 1

DESCRIPTIONS AND LOCATIONS OF AREAS

OBSERVED IN THE SUBLINER SAND LAYER AND NATIVE SOIL INVESTIGATION

(Note: Wet Spot photos are presented in Appendix V.)

POND 1

Wet Spot 1-A = Boring P1-2

Location: 439 feet East, 60 feet North of intersection of the projection of the inside edge of the South and East pond berms.

Description: Wet area in sand. No oxidation or staining of sand or native soils.

Wet Spot 1-B = Boring P1-7

Location: 257 feet East, 60 feet North of intersection of the projection of the inside edge of the South and East pond berms.

Description: Wet area in sand. No oxidation or staining of sand or native soils.

POND 2

Wet Spot 2-A = Boring P2-5

(Note: this is the additional boring. P2-7 is the slated random boring. P2-6 is also a slated random boring. Boring numbers were changed by Twinings during drilling.)

Location: 219 feet East, 25 feet South of intersection of the projection of the inside edge of the North and East pond berms.

Description: Heavy black cemented area at west end of the zone. Remainder wet with moderate discoloration of beige sand. Some show of iron oxidation leaching to contact with native.

POND 2, Cont'd

Wet Spot 2-B = Boring P2-6

Location: 67 feet West, 33 feet South of intersection of the projection of the inside edge of the North and East pond berms.

Description: Wet area only. No oxidation or staining of sand or native soils. Trenched 3-1/2 x 10 feet area into native soils. Wet to base of trench. Wet area near concrete slab at inlet to pond.

Wet Spot 2-C Identical circumstances as Wet Spot 2-D; being evaluated by Boring P2-2

Location: 421 feet East, 29 feet South of intersection of the projection of the inside edge of the North and East pond berms.

Description: Wet area only. No staining or discoloration of sand.

Wet Spot 2-D = Boring P2-2

Location: 404 feet East, 61 feet South of intersection of the projection of the inside edge of the North and East pond berms.

Description: Wet area only. No oxidation or staining of sand or native soils.

POND 3

Wet Spot 3-A = Boring P3-6

Location: 55 feet East, 25 feet South of intersection of the projection of the inside edge of the North and East pond berms.

Description: Wet area in sand only. No oxidation or staining of sand or native soils.

POND 4

Wet Spot 4-A = Boring P4-1

Location: 65 feet East, 30 feet North of intersection of the projection of the inside edge of the North and West pond berms.

Description: Wet area only. No oxidation or staining of sand or native soils.

Wet Spot 4-B = Boring P4-7

Location: 282 feet West, 25 feet South of intersection of the projection of the inside edge of the North and West pond berms.

Description: Damp area with black decomposed rock material in and on native surface. Overlying sand slightly iron oxidized, but does not show any black staining. Area goes up north berm slightly. Black layer in and on native soil looks like organic decomposition of diorite rock fragments and clasts.

TABLE 2

PARAMETERS AND ANALYTICAL METHODS

Parameter	Analytical Method
Antimony	7040 or 6010
Arsenic	7060
Barium	7080 or 6010
Beryllium	7090 or 6010
Cadmium	7131 or 6010
Chromium, trivalent	7190 or 6010
Chromium, hexavalent	7196
Cobalt	219.1 or 6010
Copper	7210 or 6010
Fluoride	340.2
Lead	7421
Mercury	7470
Molybdenum	246.1 or 6010
Nickel	7520 or 6010
Selenium	7740
Silver	7760 or 6010
Thallium	7840 or 7841
Vanadium	7910 or 6010
Zinc	7950 or 6010
pH	9040
Electrical Conductivity	9050

REFERENCE:

These Analytical Methods are those listed in the Attachment 1 of the December 1989 letter from PG&E to DTSC. Deviations are listed in the Closure Certification Report.

Analysis for all metals, except hexavalent chromium, was done using the Method 3050 extract. Hexavalent chromium was analyzed on a Method 3060 extract. Samples for fluoride analysis were acid distilled, and the distillate was analyzed by selective ion electrode.

TABLE 3

ANALYTICAL RESULTS (TOTAL CONCENTRATION) FROM SUBLINER SOIL SAMPLES - PONDS 1 THROUGH 4
TOPOCK COMPRESSOR STATION OLD POND SITE

Results in mg/kg except for pH in standard units and EC in µmohs/cm

Constituent		Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag
EPA Method		7041	6010	6010	6010	6010	6010	6010	7421	7481	6010	6010
Twinning Labs MDL		5	0.5	0.1	1	1	5	5	5	2	5	1
Range of Background Soil Conc. (Min & Max)		ND - ND	24.8 - 425	0.1 - 0.6	ND - ND	1.3 - 15.3	0.5 - 6.3	1 - 20.7	2.5 - 8.4	ND - ND	2 - 38.6	ND - ND
Range of Subliner Soil Conc. (Min & Max) per this Table		ND - ND	10 - 610	0.1 - 0.8	0.1 - 1	3 - 48	5 - 15	ND - 75	5 - 21	ND - 11	6 - 29	1 - 2
Range of Pond Sludge/Sand Conc. (Min & Max)		1.1 - 26.2	5.5 -140	ND - ND	ND - 2	1.7 -2930	0.55 - 13	2.2 - 70.7	1 - 10	3.5 -451	0.99 - 14.5	ND - ND
TTLC (mg/Kg)		500	10000	75	100	2500	8000	2500	1000	3500	2000	500
Mittelhauser Phase I/ II Soil Background Standard		7.2	373	1	0.6	43	19	20	16	1.7	53	1
Constituent		Sb	Ba	Be	Cd	Cr (Total)	Co	Cu	Pb	Mo	Ni	Ag
Mittelhauser Soil Background Standard for Pond		18.0	449.4	0.6	1.5	19.0	8.1	20.2	15.0	6.0	25.7	3.0
Boring Location	Depth of Sample											
P1-1	0.5-1	ND	220	0.1	ND	15	6	ND	12	2	11	1
P1-1	2.5-3	ND	82	0.3	ND	9	ND	ND	8	ND	8	ND
P1-1	4.5-5	ND	76	0.5	ND	13	ND	ND	14	ND	9	1
P1-2	0.5-1	ND	240	0.1	ND	16	6	ND	8	3	11	1
P1-2	2.5-3	ND	100	ND	ND	36	ND	ND	5	ND	13	ND
P1-2	4.5-5	ND	200	ND	ND	ND	ND	ND	ND	ND	ND	ND
P1-3	0.5-1	ND	270	0.1	ND	8	ND	ND	8	ND	6	ND
P1-3	2.5-3	ND	320	0.1	ND	13	ND	ND	10	2	7	1
P1-3	4.5-5	ND	150	0.1	ND	5	ND	ND	13	ND	ND	ND
P1-4	0.5-1	ND	270	ND	ND	7	9	ND	9	ND	7	ND
P1-4	2.5-3	ND	43	0.2	ND	8	6	ND	10	ND	8	ND
P1-4	4.5-5	ND	67	0.3	ND	7	ND	ND	14	2	8	ND
P1-5	0.5-1	ND	10	0.2	ND	17	ND	ND	11	ND	11	ND
P1-5	2.5-3	ND	88	0.1	ND	29	ND	ND	7	ND	7	ND
P1-5	4.5-5	ND	90	ND	ND	10	ND	ND	5	ND	13	ND
P1-6	0.5-1	ND	74	ND	ND	9	7	ND	ND	ND	6	ND
P1-6	2.5-3	ND	51	ND	ND	7	8	ND	ND	ND	6	ND
P1-6	4.5-5	ND	80	0.1	ND	11	ND	ND	5	ND	9	ND
P1-7	0-0.5-1	ND	220	0.1	ND	10	ND	ND	7	ND	7	ND
P1-7	2.5-3	ND	61	0.1	ND	9	ND	ND	ND	ND	7	ND
P1-7	4.5-5	ND	250	0.4	ND	8	ND	5	14	2	12	ND
P2-1	0.5-1	ND	140	ND	ND	13	5	ND	9	ND	6	ND
P2-1	2.5-3	ND	91	ND	ND	4	6	ND	6	ND	ND	ND
P2-1	4.5-5	ND	68	ND	ND	3	ND	ND	6	ND	ND	ND
P2-1	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P2-2	0.5-1	ND	220	0.1	ND	17	ND	ND	10	ND	10	ND
P2-2	2.5-3	ND	110	0.1	ND	17	7	ND	9	ND	11	ND
P2-2	4.5-5	ND	50	0.1	ND	5	ND	ND	7	ND	6	ND
P2-3	0.5-1	ND	290	0.1	ND	15	6	ND	10	ND	9	ND
P2-3	2.5-3	ND	280	ND	ND	16	6	ND	9	ND	11	ND
P2-3	4.5-5	ND	140	0.1	ND	25	9	ND	9	ND	29	ND
P2-4	0.5-1	ND	220	0.1	ND	16	5	ND	9	ND	10	ND
P2-4	2.5-3	ND	290	0.1	ND	12	7	ND	10	ND	12	ND
P2-4	4.5-5	ND	210	0.1	ND	23	6	ND	10	ND	14	ND
P2-4	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P2-4	9.5-10	—	—	—	—	—	—	—	—	—	—	—
P2-5	0.5-1	ND	370	0.1	ND	10	ND	ND	6	ND	7	ND
P2-5	2.5-3	ND	84	ND	ND	11	ND	ND	8	ND	6	ND
P2-5	4.5-5	ND	66	ND	ND	7	ND	8	ND	ND	ND	ND
P2-5	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P2-5	9.5-10	—	—	—	—	—	—	—	—	—	—	—
P2-5	14.5-15	—	—	—	—	—	—	—	—	—	—	—
P2-6	0.5-1	ND	230	0.1	ND	9	5	ND	7	ND	6	ND
P2-6	2.5-3	ND	130	ND	ND	22	6	ND	5	ND	10	ND
P2-6	4.5-5	ND	72	ND	ND	46	ND	ND	ND	ND	7	ND
P2-6	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P2-6	9.5-10	—	—	—	—	—	—	—	—	—	—	—
P2-7	0.5-1	ND	250	0.1	ND	11	ND	ND	7	ND	10	ND
P2-7	2.5-3	ND	120	ND	ND	11	ND	ND	ND	ND	9	ND
P2-7	4.5-5	ND	28	ND	ND	4	ND	ND	ND	ND	ND	ND
P2-7	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P2-7	9.5-10	—	—	—	—	—	—	—	—	—	—	—
P2-7	14.5-15	—	—	—	—	—	—	—	—	—	—	—
Constituent		Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag
Mittelhauser Soil Background Standard for Pond		18.0	449.4	0.6	1.5	19.0	8.1	20.2	15.0	6.0	25.7	3.0

ND - Non detectable
MDL - Method detection limit

TABLE 3

ANALYTICAL RESULTS (TOTAL CONCENTRATION) FROM SUBLINER SOIL SAMPLES - PONDS 1 THROUGH 4
TOPOCK COMPRESSOR STATION OLD POND SITE

Results in mg/kg except for pH in standard units and EC in µmohs/cm

Constituent		Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag
EPA Method		7041	6010	6010	6010	6010	6010	6010	7421	7481	6010	6010
Twinning Labs MDL		5	0.5	0.1	1	1	5	5	5	2	5	1
Range of Background Soil Conc. (Min & Max)		ND - ND	24.8 - 425	0.1 - 0.6	ND - ND	1.3 - 15.3	0.5 - 6.3	1 - 30.7	2.5 - 8.4	ND - ND	2 - 38.6	ND - ND
Range of Subliner Soil Conc. (Min & Max) per this Table		ND - ND	10 - 610	0.1 - 0.8	0.1 - 1	3 - 48	5 - 15	ND - 75	5 - 21	ND - 11	6 - 29	1 - 2
Range of Pond Sludge/Sand Conc. (Min & Max)		1.1 - 26.2	5.5 - 140	ND - ND	ND - 2	1.7 - 2930	0.55 - 13	2.2 - 70.7	1 - 10	3.5 - 451	0.99 - 14.5	ND - ND
TTLC (mg/Kg)		500	10000	75	100	2500	8000	2500	1000	3500	2000	500
Mittelhauser Phase I/ II Soil Background Standard		7.2	373	1	0.6	43	19	20	16	1.7	53	1
Constituent		Sb	Ba	Be	Cd	Cr (Total)	Co	Cu	Pb	Mo	Ni	Ag
Mittelhauser Soil Background Standard for Pond		18.0	449.4	0.6	1.5	19.0	8.1	20.2	15.0	6.0	25.7	3.0
Boring Location	Depth of Sample											
P3-1	0.5-1	ND	92	ND	ND	11	ND	6	9	ND	6	ND
P3-1	2.5-3	ND	73	ND	ND	17	7	6	8	ND	9	ND
P3-1	4.5-5	ND	140	ND	ND	19	6	5	8	ND	10	ND
P3-2	0.5-1	ND	180	ND	ND	22	5	9	10	ND	9	ND
P3-2	2.5-3	ND	93	ND	ND	25	7	10	9	ND	10	ND
P3-2	4.5-5	ND	40	0.4	ND	14	ND	8	20	ND	9	ND
P3-2	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P3-3	0.5-1	ND	170	ND	ND	15	ND	8	9	ND	7	ND
P3-3	2.5-3	ND	110	ND	ND	17	6	9	10	ND	7	ND
P3-3	4.5-5	ND	110	ND	ND	24	7	11	11	ND	9	ND
P3-4	0.5-1	ND	300	ND	ND	23	6	7	11	ND	10	2
P3-4	2.5-3	ND	120	ND	ND	14	ND	ND	7	ND	ND	ND
P3-4	4.5-5	ND	64	ND	ND	11	ND	6	5	ND	7	ND
P3-5	0.5-1	ND	290	ND	ND	13	5	7	12	ND	7	ND
P3-5	2.5-3	ND	93	ND	ND	16	5	7	7	ND	7	ND
P3-5	4.5-5	ND	78	ND	ND	21	7	9	8	ND	11	ND
P3-6	0.5-1	ND	430	ND	ND	13	ND	9	15	ND	6	1
P3-6	2.5-3	ND	220	ND	ND	13	ND	ND	13	ND	7	1
P3-6	4.5-5	ND	120	0.3	ND	26	8	10	8	ND	12	ND
P3-6	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P4-1	0.5-1	ND	82	0.1	ND	20	7	28	6	6	10	ND
P4-1	2.5-3	ND	73	ND	ND	12	5	40	8	ND	9	ND
P4-1	4.5-5	ND	220	0.8	ND	20	6	31	21	ND	16	1
P4-1	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P4-1	9.5-10	—	—	—	—	—	—	—	—	—	—	—
P4-2	0.5-1	ND	120	ND	ND	10	6	29	5	ND	6	ND
P4-2	2.5-3	ND	100	0.1	ND	16	6	53	8	ND	11	1
P4-2	4.5-5	ND	150	0.1	ND	4	ND	16	7	ND	ND	ND
P4-3	0.5-1	ND	92	ND	ND	12	6	30	7	5	7	ND
P4-3	2.5-3	ND	84	0.1	ND	15	6	34	9	5	9	ND
P4-3	4.5-5	ND	130	0.1	ND	20	8	25	9	ND	13	ND
P4-4	0.5-1	ND	250	ND	ND	19	15	75	7	ND	24	1
P4-4	2.5-3	ND	300	0.1	0.1	21	11	31	7	ND	16	ND
P4-4	4.5-5	ND	160	ND	ND	16	7	30	8	ND	8	ND
P4-5	0.5-1	ND	540	0.1	ND	9	ND	9	11	ND	6	ND
P4-5	2.5-3	ND	90	ND	ND	13	5	33	ND	ND	9	ND
P4-5	4.5-5	ND	76	0.2	1	13	10	20	ND	ND	12	ND
P4-6	0.5-1	ND	610	0.1	ND	10	ND	70	10	ND	8	1
P4-6	2.5-3	ND	520	ND	1	15	10	44	7	ND	14	1
P4-6	4.5-5	ND	84	ND	ND	13	ND	25	ND	ND	9	ND
P4-7	0.5-1	ND	91	0.1	ND	10	ND	57	13	11	7	2
P4-7	2.5-3	ND	170	ND	ND	18	8	69	9	6	13	1
P4-7	4.5-5	ND	170	0.1	ND	18	7	70	10	5	12	1
P4-7	6.5-7	—	—	—	—	—	—	—	—	—	—	—
P4-7	9.0-9.5	—	—	—	—	—	—	—	—	—	—	—
P4-7	9.5-10	—	—	—	—	—	—	—	—	—	—	—
P4-7	14.5-15	—	—	—	—	—	—	—	—	—	—	—
P4-7	19.5-20	—	—	—	—	—	—	—	—	—	—	—
P4-7	24.5-25	—	—	—	—	—	—	—	—	—	—	—
Constituent		Sb	Ba	Be	Cd	Cr (Total)	Co	Cu	Pb	Mo	Ni	Ag
Mittelhauser Soil Background Standard for Pond		18.0	449.4	0.6	1.5	19.0	8.1	20.2	15.0	6.0	25.7	3.0

ND - Non detectable
MDL - Method detection limit

TABLE 3

ANALYTICAL RESULTS (TOTAL CONCENTRATION) FROM SUBLINER SOIL SAMPLES - PONDS 1 THROUGH 4
TOPOCK COMPRESSOR STATION OLD POND SITE

Results in mg/kg except for pH in standard units and EC in µmohs/cm

Constituent		Tl	V	Zn	As	Hg	Se	F	Cr VI	pH	EC
EPA Method		7841	6010	6010	7060	7470	7740	340.2	7196	9045	9050
Twinning Labs MDL		0.5	5	5	0.2	0.1	0.3	0.1	0.1	N/A	1
Range of Background Soil Conc. (Min & Max)		ND-ND	2.8 - 36.7	5.4 - 40.7	ND - 4.5	ND - ND	ND - ND	47 - 296	ND - ND	8.4 - 10.1	132 - 2280
Range of Subliner Soil Conc. (Min & Max) per this Table		ND - ND	8 - 53	7 - 64	0.8 - 7.6	ND - ND	0.3 - 4.7	0.7 - 14.2	ND - 0.2	8.1 - 9.7	237 - 23000
Range of Pond Sludge/Sand Conc. (Min & Max)		ND - ND	2.7 - 47	7 - 1800	0.7 - 21	0.03 - 1	ND - 1.4	19.2 - 8000	ND - 1.6	7.4 - 8.99	1600 - 89100
TTLC (mg/Kg)		700	2400	5000	500	20	100	18000	500	—	—
Mittelhauser Phase I/ II Soil Background Standard		5	50	135	44	0.123	0.5	914	1	7.62-10.07	None
Constituent		Tl	V	Zn	As	Hg	Se	F	Cr (VI)	pH	EC
Mittelhauser Soil Background Standard for Pond		15.0	41.7	47.2	5.5	0.6	1.5	342.7	3.0	7.7-10.6	2551
Boring Location	Depth of Sample										
P1-1	0.5-1	ND	35	33	1.4	ND	2.2	2.4	ND	8.9	1040
P1-1	2.5-3	ND	22	20	1.1	ND	1.7	4.5	ND	9	1050
P1-1	4.5-5	ND	20	29	3	ND	2.3	4.3	ND	8.5	1810
P1-2	0.5-1	ND	28	27	2.7	ND	1.7	3.1	ND	8.6	4170
P1-2	2.5-3	ND	25	33	4.8	ND	2.1	1.7	ND	9.3	1660
P1-2	4.5-5	ND	9	9	3.1	ND	2	1.3	ND	9.7	455
P1-3	0.5-1	ND	13	19	3.1	ND	2.3	8.3	0.2	9.1	479
P1-3	2.5-3	ND	12	19	4.6	ND	1.9	14.2	0.2	9.4	855
P1-3	4.5-5	ND	8	17	2.3	ND	1.7	1.6	ND	9	2140
P1-4	0.5-1	ND	15	21	4.7	ND	1.3	1.6	ND	8.5	1650
P1-4	2.5-3	ND	17	23	3	ND	1.9	2.7	ND	9	1950
P1-4	4.5-5	ND	19	26	3	ND	1	4.8	ND	9.1	2100
P1-5	0.5-1	ND	23	31	2	ND	0.7	6.8	0.1	9	293
P1-5	2.5-3	ND	15	21	2.4	ND	ND	4.3	ND	9	237
P1-5	4.5-5	ND	19	28	2.9	ND	2	3.7	ND	9.3	246
P1-6	0.5-1	ND	14	20	2.9	ND	3.1	2.1	ND	8.9	1210
P1-6	2.5-3	ND	13	13	3.4	ND	2	1.4	ND	9.7	671
P1-6	4.5-5	ND	19	23	3.3	ND	0.5	3.4	ND	9.7	670
P1-7	0-0.5-1	ND	14	21	3.3	ND	0.3	1.7	ND	8.6	1720
P1-7	2.5-3	ND	18	25	1.8	ND	ND	3.6	ND	8.9	1230
P1-7	4.5-5	ND	17	27	ND	ND	ND	5.8	ND	8.3	1650
P2-1	0.5-1	ND	24	27	3.5	ND	4.7	1.8	ND	8.6	22,200
P2-1	2.5-3	ND	10	7	2.4	ND	3.8	0.6	ND	8.4	3340
P2-1	4.5-5	ND	10	10	4.1	ND	2	0.7	ND	8.6	3840
P2-1	6.5-7	—	—	—	—	—	—	—	—	—	1690
P2-2	0.5-1	ND	18	33	3.6	ND	4.2	2.2	ND	8.4	3800
P2-2	2.5-3	ND	31	31	3.5	ND	4.1	1.5	ND	9.1	270
P2-2	4.5-5	ND	8	13	4	ND	ND	2.6	ND	9.3	340
P2-3	0.5-1	ND	18	28	4.6	ND	1.3	2.4	ND	8.5	9170
P2-3	2.5-3	ND	31	30	3.4	ND	1.5	2.4	ND	8.9	2360
P2-3	4.5-5	ND	38	38	3.4	ND	1.1	2.7	ND	9.3	2570
P2-4	0.5-3	ND	24	28	3.7	ND	1.3	0.7	ND	9	3100
P2-4	2.5-3	ND	33	33	5	ND	1.4	1	ND	9	2920
P2-4	4.5-5	ND	36	39	4.5	ND	1.4	2	ND	9.1	3590
P2-4	6.5-7	—	—	—	—	—	—	—	—	—	2920
P2-4	9.5-10	—	—	—	—	—	—	—	—	—	2130
P2-5	0.5-1	ND	16	23	3.6	ND	1.2	6.2	ND	8.9	14,400
P2-5	2.5-3	ND	15	22	4.8	ND	1.3	4.4	ND	8.8	9210
P2-5	4.5-5	ND	10	16	2.9	ND	2.8	3.2	ND	8.9	6790
P2-5	6.5-7	—	—	—	—	—	—	—	—	—	5540
P2-5	9.5-10	—	—	—	—	—	—	—	—	—	8000
P2-5	14.5-15	—	—	—	—	—	—	—	—	—	1420
P2-6	0.5-1	ND	16	24	3.2	ND	4.2	1.5	ND	8.8	5290
P2-6	2.5-3	ND	22	35	3.3	ND	0.4	1.4	ND	8.9	2640
P2-6	4.5-5	ND	13	19	0.2	ND	2.3	1	ND	8.6	3940
P2-6	6.5-7	—	—	—	—	—	—	—	—	—	3020
P2-6	9.5-10	—	—	—	—	—	—	—	—	—	2230
P2-7	0.5-1	ND	18	29	5.1	ND	1.8	2.3	ND	8.6	10,100
P2-7	2.5-3	ND	19	24	3.3	ND	1.7	1.2	ND	9.1	3420
P2-7	4.5-5	ND	9	12	3.3	ND	1.8	1	ND	8.7	5080
P2-7	6.5-7	—	—	—	—	—	—	—	—	—	5180
P2-7	9.5-10	—	—	—	—	—	—	—	—	—	5520
P2-7	14.5-15	—	—	—	—	—	—	—	—	—	1300
Constituent		Tl	V	Zn	As	Hg	Se	F	Cr VI	pH	EC
Mittelhauser Soil Background Standard for Pond		15.0	41.7	47.2	5.5	0.6	1.5	342.7	3.0	7.7-10.6	2551

ND - Non detectable
MDL - Method detection limit

TABLE 3

ANALYTICAL RESULTS (TOTAL CONCENTRATION) FROM SUBLINER SOIL SAMPLES - PONDS 1 THROUGH 4
TOPOCK COMPRESSOR STATION OLD POND SITE

Results in mg/kg except for pH in standard units and EC in μmohs/cm

Constituent		Tl	V	Zn	As	Hg	Se	F	Cr VI	pH	EC
EPA Method		7841	6010	6010	7060	7470	7740	340.2	7196	9045	9050
Twinning Labs MDL		0.5	5	5	0.2	0.1	0.3	0.1	0.1	N/A	1
Range of Background Soil Conc. (Min & Max)		ND-ND	2.8 - 36.7	5.4 - 40.7	ND - 4.5	ND - ND	ND - ND	47 - 296	ND - ND	8.4 - 10.1	132 - 2280
Range of Subliner Soil Conc. (Min & Max) per this Table		ND - ND	8 - 53	7 - 64	0.8 - 7.6	ND - ND	0.3 - 4.7	0.7 - 14.2	ND - 0.2	8.1 - 9.7	237 - 23000
Range of Pond Sludge/Sand Conc. (Min & Max)		ND - ND	2.7 - 47	7 - 1800	0.7 - 21	0.03 - 1	ND - 1.4	19.2 - 8000	ND - 1.6	7.4 - 8.99	1600 - 89100
TTLC (mg/Kg)		700	2400	5000	500	20	100	18000	500	—	—
Mittelhauser Phase I/ II Soil Background Standard		5	50	135	44	0.123	0.5	914	1	7.62-10.07	None
Constituent		Tl	V	Zn	As	Hg	Se	F	Cr (VI)	pH	EC
Mittelhauser Soil Background Standard for Pond		15.0	41.7	47.2	5.5	0.6	1.5	342.7	3.0	7.7-10.6	2551
Boring Location	Depth of Sample										
P3-1	0.5-1	ND	19	19	2.9	ND	1.3	1	ND	9	5830
P3-1	2.5-3	ND	24	31	1.9	ND	0.4	1.4	ND	9.1	3640
P3-1	4.5-5	ND	25	37	1.9	ND	0.6	1.4	ND	9	2430
P3-2	0.5-1	ND	34	35	3.1	ND	2.1	0.9	ND	9	1130
P3-2	2.5-3	ND	34	39	1.9	ND	0.5	1.6	ND	9	1600
P3-2	4.5-5	ND	29	42	5	ND	ND	2.1	ND	8.5	3420
P3-2	6.5-7	—	—	—	—	—	—	—	—	—	2490
P3-3	0.5-1	ND	23	26	2.9	ND	0.5	0.8	ND	8.7	14700
P3-3	2.5-3	ND	27	41	1.8	ND	0.7	1.1	ND	8.8	1620
P3-3	4.5-5	ND	38	36	2.7	ND	0.6	1.2	ND	8.8	1930
P3-4	0.5-1	ND	28	30	3.8	ND	1.7	1.2	ND	8.5	1120
P3-4	2.5-3	ND	17	22	1.6	ND	0.4	0.8	ND	9.2	661
P3-4	4.5-5	ND	19	20	1.7	ND	0.6	2.4	ND	9.6	1180
P3-5	0.5-1	ND	25	22	3.1	ND	0.8	0.9	ND	8.4	5520
P3-5	2.5-3	ND	25	25	1.9	ND	0.7	0.7	ND	8.7	1750
P3-5	4.5-5	ND	30	33	1.8	ND	0.8	0.7	ND	8.5	1750
P3-6	0.5-1	ND	21	24	5.2	ND	3.1	4.9	ND	8.7	7320
P3-6	2.5-3	ND	22	20	4.6	ND	0.8	2.6	ND	8.4	12200
P3-6	4.5-5	ND	26	33	4.9	ND	0.3	1.6	ND	8.8	4090
P3-6	6.5-7	—	—	—	—	—	—	—	—	—	2340
P4-1	0.5-1	ND	41	42	1.3	ND	3.8	1	ND	9.1	7810
P4-1	2.5-3	ND	30	50	1.9	ND	0.7	1.1	ND	8.5	3660
P4-1	4.5-5	ND	35	57	3.4	ND	ND	2	ND	8.1	4360
P4-1	6.5-7	—	—	—	—	—	—	—	—	—	4520
P4-1	9.5-10	—	—	—	—	—	—	—	—	—	750
P4-2	0.5-1	ND	28	39	1.4	ND	0.9	0.7	ND	9.2	739
P4-2	2.5-3	ND	36	50	1.4	ND	2.9	1.1	ND	8.9	1440
P4-2	4.5-5	ND	10	18	2.4	ND	0.6	0.9	ND	9	703
P4-3	0.5-1	ND	28	55	1.8	ND	0.9	0.9	ND	9.2	9340
P4-3	2.5-3	ND	33	44	1.5	ND	1	1.2	ND	9.2	13200
P4-3	4.5-5	ND	38	45	1.8	ND	4.1	1.1	ND	8.9	971
P4-4	0.5-1	ND	53	49	2.9	ND	1.7	0.7	ND	8.4	1370
P4-4	2.5-3	ND	26	44	1.8	ND	1.7	0.7	ND	8.9	889
P4-4	4.5-5	ND	32	50	2.2	ND	1.7	1.1	ND	8.7	786
P4-5	0.5-1	ND	18	23	7.8	ND	5.3	2	ND	8.8	1590
P4-5	2.5-3	ND	21	41	3	ND	ND	0.9	ND	9.5	409
P4-5	4.5-5	ND	26	39	2.8	ND	ND	1.2	ND	9.6	379
P4-6	0.5-1	ND	24	57	4.6	ND	1.2	3.2	ND	8.7	4170
P4-6	2.5-3	ND	26	59	2.3	ND	1	2	ND	9.2	2070
P4-6	4.5-5	ND	22	39	2	ND	ND	1.5	ND	8.7	1600
P4-7	0.5-1	ND	24	43	0.9	ND	1.3	5.6	ND	9	23000
P4-7	2.5-3	ND	31	59	0.9	ND	1.5	5.1	ND	9.4	14300
P4-7	4.5-5	ND	35	64	0.8	ND	1.6	2.7	ND	9	14200
P4-7	6.5-7	—	—	—	—	—	—	—	—	—	9950
P4-7	9.0-9.5	—	—	—	—	—	—	—	—	—	12500
P4-7	9.5-10	—	—	—	—	—	—	—	—	—	13500
P4-7	14.5-15	—	—	—	—	—	—	—	—	—	14000
P4-7	19.5-20	—	—	—	—	—	—	—	—	—	13000
P4-7	24.5-25	—	—	—	—	—	—	—	—	—	2080
Constituent		Tl	V	Zn	As	Hg	Se	F	Cr (VI)	pH	EC
Mittelhauser Soil Background Standard for Pond		15.0	41.7	47.2	5.5	0.6	1.5	342.7	3.0	7.7-10.6	2551

ND - Non detectable
MDL - Method detection limit

APPENDICES

APPENDIX I

ANALYTICAL DATA FROM POND SLUDGE AND SAND SAMPLES
AND BACKGROUND SOIL SAMPLES

ANALYTICAL DATA REPORT
SEDIMENT AND SAND SAMPLES
PHASE 3, EVAPORATION PONDS

CLOSURE OF
HAZARDOUS WASTE MANAGEMENT FACILITIES

Prepared for:

PG&E
TOPOCK COMPRESSOR STATION

Prepared by:

MITTELHAUSER CORPORATION
LAGUNA HILLS, CALIFORNIA

REVISION 0: NOVEMBER 1990
REVISION 1: FEBRUARY 1992

TABLE 2-1
EVAPORATION PONDS BACKGROUND ANALYSIS RESULTS
TOTAL CONCENTRATIONS, mg/kg
EXTRACTION METHOD 3050/3060

			Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se	F	Cr VI	pH
EPA METHOD			6010	6010	6010	6010	6010	6010	6010	6010	6010	6010	6010	6060	6010	6010	7060	7470	7740	340.2	7196	9045
DETECTION LIMIT			6.	1.	0.2	0.5	1.	1.	2.	5.	2.	4.	1.	5.	1.	2.	0.5	0.2	0.5	50	1	NA
BACKGROUND STANDARDS			18.0	449.4	0.6	1.5	18.5	8.1	20.2	15.0	6.0	25.7	3.0	15.0	41.7	47.2	5.5	0.6	1.5	342.7	3.0	7.7-10.6
SAMPLE NO	SAMPLE LOCATION	DEPTH (FT)																				
B-1-1	B-1	1	ND	386	0.21	ND	11.9	5.2	6.6	ND	ND	9.3	ND	ND	23.3	26.5	2.9	ND	ND	150	ND	9.4
B-1-2	B-1	3	ND	130	ND	ND	8.1	5.2	20.7	ND	ND	6.8	ND	ND	20.4	21.3	1.9	ND	ND	130	ND	8.4
B-1-3	B-1	5	ND	71.3	ND	ND	8.2	3.9	8.0	ND	ND	7.4	ND	ND	21.6	23.5	2.7	ND	ND	180	ND	9.2
B-1-4	B-1	7	ND	92.7	ND	ND	11.3	5.3	10.1	ND	ND	10.8	ND	ND	25.2	29.4	1.5	ND	ND	210	ND	9.0
B-1-5	B-1	15	ND	79.8	ND	ND	2.4	2.0	4.5	ND	ND	ND	ND	ND	6.7	10.3	3.6	ND	ND	130	ND	9.2
B-1-5D	B-1	15	ND	91.9	ND	ND	12.7	ND	10.3	3.8	ND	38.6	ND	ND	14.0	19.6	4.2	ND	ND	127	ND	9.4
B-1-6	B-1	20	ND	29.8	ND	ND	1.9	1.1	ND	ND	ND	ND	ND	ND	5.3	7.1	2.3	ND	ND	110	ND	9.4
B-1-7	B-1	25	ND	225	0.34	ND	9.3	4.5	10.4	ND	ND	9.9	ND	ND	18.0	31.1	2.1	ND	ND	280	ND	9.7
B-2-1	B-2	1	ND	318	0.25	ND	6.0	2.9	7.6	ND	ND	5.9	ND	ND	16.6	18.0	4.3	ND	ND	110	ND	8.6
B-2-2	B-2	3	ND	154	ND	ND	10.6	5.3	11.8	ND	ND	9.5	ND	ND	27.2	33.4	2.2	ND	ND	190	ND	9.4
B-2-3	B-2	5	ND	184	0.25	ND	15.3	6.3	12.8	ND	ND	10.9	ND	ND	32.9	33.8	1.7	ND	ND	200	ND	9.0
B-2-4	B-2	7	ND	77.2	ND	ND	8.4	4.6	8.6	ND	ND	8.1	ND	ND	23.0	23.8	2.1	ND	ND	240	ND	8.5
B-2-5	B-2	10	ND	49.4	ND	ND	2.6	1.9	2.8	ND	ND	ND	ND	ND	8.5	11.1	3.4	ND	ND	92	ND	9.1
B-2-6	B-2	15	ND	58.9	ND	ND	2.1	1.7	2.8	ND	ND	ND	ND	ND	6.1	9.7	1.2	ND	ND	90	ND	9.4
B-2-6D	B-2	15	ND	78.2	ND	ND	6.5	ND	8.8	ND	ND	5.7	ND	ND	11.4	21.6	2.2	ND	ND	104	ND	8.7
B-2-7	B-2	20	ND	64.5	ND	ND	9.4	2.3	3.1	ND	ND	5.3	ND	ND	9.8	11.4	1.2	ND	ND	110	ND	9.6
B-2-8	B-2	25	ND	100	0.22	ND	5.8	3.0	5.4	ND	ND	5.5	ND	ND	15.7	17.5	2.2	ND	ND	87	ND	9.5
B-3-1	B-3	1	ND	425	0.26	ND	11.0	5.0	10.3	ND	ND	8.1	ND	ND	25.6	28.9	3.4	ND	ND	140	ND	8.4
B-3-2	B-3	3	ND	159	ND	ND	7.9	4.4	6.4	ND	ND	6.9	ND	ND	21.2	25.7	2.2	ND	ND	130	ND	8.9
B-3-3	B-3	5	ND	64.1	ND	ND	4.2	2.2	4.0	ND	ND	ND	ND	ND	11.2	13	1.4	ND	ND	150	ND	8.8
B-3-4	B-3	7	ND	48.9	0.32	ND	7.5	3.7	6.3	ND	ND	7.7	ND	ND	22.2	22.6	4.3	ND	ND	270	ND	8.5
B-3-5	B-3	10	ND	120	ND	ND	6.9	2.9	5.3	ND	ND	6.5	ND	ND	13.5	17.8	1.4	ND	ND	170	ND	8.9
B-3-6	B-3	20	ND	33.9	ND	ND	2.6	1.3	3.3	ND	ND	ND	ND	ND	4.2	7.1	0.5	ND	ND	74	ND	10.0
B-3-7	B-3	25	ND	34.0	ND	ND	1.8	1.0	3.1	ND	ND	ND	ND	ND	3.7	6.0	0.7	ND	ND	79	ND	10.0
B-4-1	B-4	1	ND	314	ND	ND	4.6	2.8	7.6	ND	ND	4.4	ND	ND	10.0	17.7	1.7	ND	ND	87	ND	9.3
B-4-2	B-4	3	ND	329	ND	ND	8.2	4.0	7.7	ND	ND	6.7	ND	ND	17.5	22.7	3.0	ND	ND	170	ND	9.3
B-4-3	B-4	5	ND	41.9	ND	ND	5.7	2.6	6.5	ND	ND	6.9	ND	ND	10.0	15.8	1.0	ND	ND	120	ND	8.6
B-4-4	B-4	7	ND	90.8	ND	ND	8.3	3.5	10.1	ND	ND	6.5	ND	ND	15.4	22.1	1.2	ND	ND	210	ND	9.1
B-4-4D	B-4	7	ND	95.7	ND	ND	13.6	3.6	12.9	ND	ND	7.8	ND	ND	36.7	35.7	2.1	ND	ND	296	ND	8.9
B-4-5	B-4	10	ND	110	0.55	ND	10.4	5.6	15.4	8.4	ND	12.0	ND	ND	20.3	40.7	4.5	ND	ND	250	ND	9.0
B-4-6	B-4	15	ND	119	ND	ND	4.3	2.5	4.5	ND	ND	4.3	ND	ND	9.6	14.9	1.2	ND	ND	160	ND	9.7
B-4-6D	B-4	15	ND	216.0	ND	ND	11.7	0.5	10.1	ND	ND	5.8	ND	ND	25.1	21.3	2.5	ND	ND	169	ND	8.9
B-4-7	B-4	21	ND	39.3	ND	ND	2.5	1.3	2.3	ND	ND	ND	ND	ND	3.8	6.8	0.6	ND	ND	52	ND	9.9
B-4-8	B-4	25	ND	24.8	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	2.8	5.4	0.7	ND	ND	47	ND	10.1
STATISTICS																						
MEAN, X			6.0	131.1	0.1	0.5	7.2	3.0	7.4	2.7	2.0	6.9	1.0	5.0	15.8	19.8	2.2	0.2	0.5	150.4	1.0	9.2
STANDARD DEVIATION, S			0.0	106.1	0.1	0.0	3.8	1.7	4.3	1.0	0.0	6.2	0.0	0.0	8.6	9.1	1.1	0.0	0.0	64.1	0.0	0.5
COEFFICIENT OF VARIATION			0.0	81.0	67.0	0.0	52.3	55.0	57.4	37.4	0.0	90.2	0.0	0.0	54.3	46.2	51.1	0.0	0.0	42.1	0.0	5.1
X+3S			6.0	449.4	0.4	0.5	18.5	8.1	20.2	5.7	2.0	25.7	1.0	5.0	41.7	47.2	5.5	0.2	0.5	342.7	1.0	10.6
MINIMUM			6.0	24.8	0.1	0.5	1.3	0.5	1.0	2.5	2.0	2.0	1.0	5.0	2.8	5.4	0.5	0.2	0.5	47.0	1.0	8.4
MAXIMUM			6.0	425.0	0.6	0.5	15.3	6.3	20.7	8.4	2.0	38.6	1.0	5.0	36.7	40.7	4.5	0.2	0.5	296.0	1.0	10.1

TABLE 2-3

TRACE ELEMENT CONCENTRATIONS IN NATURAL SOIL AND

EVAPORATION POND AREA BACKGROUND MAXIMA AND STANDARDS, MG/KG

ELEMENT	BACKGROUND STANDARDS FOR THE EVAPORATION POND AREA	AVERAGE IN NATURAL SOILS (a)	MAXIMUM BACKGROUND CONCENTRATIONS IN THE EVAPORATION POND AREA	COMMON RANGE IN NATURAL SOILS (a)
Antimony	18[b]	-	< 6	2-10
Barium	449	430	425	100-3000
Beryllium	0.6	6	0.55	0.1-40
Cadmium	1.5[b]	0.06	< 0.5	0.01-0.7
Chromium	19	100	15.3	1-1000
Cobalt	8	8	6.3	1-40
Copper	20	30	20.7	2-100
Lead	15	10	8.4	2-200
Molybdenum	6[b]	2	< 2	0.2-5
Nickel	26	40	38.6	5-500
Silver	3[b]	0.05	< 1	0.01-5
Thallium	15[b]	-	< 5	-
Vanadium	42	100	36.7	20-500
Zinc	47	50	40.7	10-300
Arsenic	5.5	5	4.5	1-50
Mercury	0.6[b]	0.03	< 0.2	0.01-0.3
Selenium	1.5[b]	0.3	< 0.5	0.1-2
Fluorine	343	200	296	10-4000

(a) Reference: USEPA, Office of Solid Waste and Emergency Response. Hazardous Waste Land Treatment, SW-874, April 1983.

(b) An element that had more than half the reported concentrations less than the analytical detection limit. The background standard is equal to three times the detection limit.

TABLE 3-1
RANDOM SAMPLE LOCATIONS

Pond	Rectangle	Nominal Dimensions	Location Number	Random Numbers	Polar Coordinates Distance	Polar Coordinates Angle
1	1	200 X 90	1	31	34	53
			2	84	108	42
1	2	200 X 90	3	28	161	6
			4	78	172	21
1	3	200 X 90	5	51	49	66
			6	74	102	38
2	1	200 X 110	1	12	41	15
			2	31	39	59
2	2	200 X 100	3	72	81	60
			4	57	149	20
2	3	220 X 90	5	25	111	9
			6	18	176	3
3	1	180 X 110	1	95	134	48
			1	95	105	48*
			2	21	28	51
3	2	170 X 110	3	58	147	22
			4	41	47	69
3	3	180 X 110	5	26	110	12
			6	28	146	9
			6	28	75	49*
4	1	200 X 75	1	16	120	4
			2	18	160	3
4	2	150 X 150	3	72	109	74
			4	64	108	56
4	3	220 X 110	5	36	136	14
			6	31	40	56

The original compass bearing of N68W was used as a baseline for the sampling grid. The coordinate angle was added to the baseline reading to identify each sample location.

* - These locations were used for the December 1991 sampling only. The sample locations were moved slightly from the original locations to place the sampling point in the sediment.

TABLE 3-2
EVAPORATION PONDS ANALYSIS RESULTS
EXTRACTION METHOD 3050/3060
TOTAL CONCENTRATIONS, mg/kg

				Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se	P	Cr VI	pH
EPA METHOD				6010	6010	6010	6010	6010	6010	6010	7421	6010	6010	6010	7841	6010	6010	7060	7470	7740	340.2	7196	9045
DETECTION LIMIT				6.	1.	0.2	0.5	5.	3	3	1.	2.	3.	1.	5.	1.	5.	0.5	0.1	0.5	50	0.2	NA
BACKGROUND STANDARDS				16.0	469.4	0.6	1.5	18.5	8.1	20.2	15.0	6.0	25.7	3.0	13.0	41.7	67.2	3.5	0.6	1.5	542.7	3.0	7.7-10.6
STLC (mg/l)				15	100	0.75	1.0	560	80	25	5.0	230	20	5	7.0	24	250	5	0.2	1.0	180	5	
TTLC (mg/kg)				500	10000	75	100	2500	8000	2500	1000	3500	2000	500	700	2400	5000	500	20	100	18000	500	
SAMPLE NO.	SAMPLE LOCATION	DEPTH (FT)	TYPE																				
											POND 1												
1352-20-01	P1-1	0-5"	SEDIMENT	ND	27	ND	ND	2,800	ND	46	60	510	ND	ND	ND	47	1,400	21	ND	0.51	8000	1.1	7.53
1352-20-44	P1-1	0-5"	SEDIMENT	NA	NA	NA	NA	2,930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1352-20-02	P1-1	5.5-11.5"	SAND	ND	19	ND	ND	26	ND	2.2	2.5	ND	ND	ND	ND	2.5	13	1.2	ND	ND	700	.2	8.94
1352-20-03	P1-1	0-12.5"	COMPOSITE	ND	57	ND	ND	1,300	ND	30	ND	ND	ND	ND	ND	19	1,100	7.0	0.13	ND	2000	.5	8.00
1352-20-04	P1-2	0-2"	SEDIMENT	6.1	34	ND	ND	380	1.4	10	2.1	24	ND	ND	ND	9.4	380	4.5	ND	ND	2700	ND	8.01
1352-20-05	P1-2	2-12"	SAND	ND	21	ND	ND	15	ND	ND	2.5	ND	ND	ND	ND	3.6	15	1.3	ND	ND	570	ND	8.99
1352-20-06	P1-2	0-12"	COMPOSITE	ND	32	ND	ND	110	ND	2.9	2.4	2.0	ND	ND	ND	4.9	110	2.0	ND	ND	560	ND	8.64
1352-20-07	P1-3	0-1.5"	SEDIMENT	ND	13	ND	ND	1,800	ND	45	ND	89	ND	ND	ND	34	1,800	12	0.15	0.54	6000	ND	7.81
1352-20-08	P1-3	1.5-12"	SAND	ND	15	ND	ND	15	ND	ND	2.4	ND	ND	ND	ND	2.7	19	2.0	ND	ND	1200	0.3	8.80
1352-20-09	P1-3	0-12"	COMPOSITE	ND	16	ND	ND	140	ND	3.7	2.2	8.7	ND	ND	ND	4.2	150	2.4	ND	ND	930	1.6	8.25
1352-20-10	P1-4	0-4"	SEDIMENT	ND	15	ND	ND	1,300	ND	36	ND	580	ND	ND	ND	17	1,000	8.2	0.14	ND	9800	1.5	7.86
1352-20-10D	P1-4	0-4"	SEDIMENT	26.2	120	ND	ND	889	ND	55.0	2.87	106	7.15	ND	ND	22.0	943.	6.60	0.20	0.93	63.9	ND	7.47
1352-20-11	P1-4	4-12"	SAND	ND	12	ND	ND	16	ND	ND	1.8	2.1	ND	ND	ND	3.4	17	1.1	ND	ND	1000	0.2	8.60
1352-20-12	P1-4	0-12"	COMPOSITE	ND	15	ND	ND	230	ND	5.7	1.4	20	ND	ND	ND	5.1	170	2.7	ND	ND	1300	1.6	8.02
1352-20-15	P1-5	0-5"	SEDIMENT	5.	31	ND	ND	1,700	0.94	41	4.1	270	3.3	ND	ND	23	1,000	12	0.12	0.75	9800	ND	7.60
1352-20-43	P1-5	0-4"	SEDIMENT	NA	NA	NA	NA	1,560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1352-20-16	P1-5	5-13"	SAND	1.1	8.2	ND	ND	34	0.55	2.0	1.8	6.6	0.99	ND	ND	3.5	23	1.1	ND	ND	1200	ND	8.04
1352-20-15	P1-5	0-13"	COMPOSITE	4.8	11	ND	ND	250	0.52	6.9	2.0	43	1.2	ND	ND	4.8	260	2.8	0.04	0.22	1000	ND	7.62
1352-20-16	P1-6	0-0.25"	SEDIMENT	ND	19	ND	ND	340	1.6	9.9	1.4	51	ND	ND	ND	9.2	120	3.7	ND	ND	1300	ND	8.20
1352-20-17	P1-6	0.25-14"	SAND	ND	22	ND	ND	190	1.0	5.0	1.5	ND	ND	ND	ND	3.7	150	2.5	ND	1.4	400	1.6	7.78
1352-20-17D	P1-6	0.25-14"	SAND	ND	97.5	ND	ND	150	ND	10.3	2.92	ND(3.5)	14.5	ND	ND	11.5	136	2.61	ND	ND	18.2	ND	7.98
1352-20-18	P1-6	0-14"	COMPOSITE	ND	18	ND	ND	200	1.0	6.0	1.7	3.7	ND	ND	ND	6.0	160	2.4	ND	1.0	910	1.0	7.90
											POND 2												
1352-20-28	P2-1	0-5"	SEDIMENT	ND	34.5	ND	ND	640	ND	33.1	ND	4.5	ND	ND	ND	13.6	456	9.2	ND	ND	2700	ND	7.60
1352-20-29	P2-1	5-15"	SAND	ND	23.6	ND	ND	1.7	ND	ND	ND	8.7	ND	ND	ND	2.9	7	0.7	ND	ND	82	ND	8.30
	P2-1	0-15"	COMPOSITE #	ND	36.5	ND	ND	347.2	ND	12.7	ND	7.0	ND	ND	ND	7.7	172.0	4.0	ND	ND	1089	ND	8.15
1352-20-30	P2-2	0-7"	SEDIMENT	ND	72.4	ND	1	559	1	39.0	ND	333.0	ND	ND	ND	19.2	535	10.4	ND	ND	3200	ND	7.40
1352-20-31	P2-2	7-15"	SAND	ND	36.9	ND	ND	28	ND	2.8	ND	34.0	ND	ND	ND	6.8	29	1.4	ND	ND	59	ND	8.50
	P2-2	0-15"	COMPOSITE #	ND	55.5	ND	ND	236	ND	18.7	ND	173.7	ND	ND	ND	11.5	264	5.7	ND	ND	1525	ND	7.97
1352-20-32	P2-3	0-5"	SEDIMENT	ND	69.7	ND	ND	470	ND	24.2	ND	451.0	ND	ND	ND	14.9	389	9.4	ND	ND	2900	ND	7.50
1352-20-33	P2-3	5-12"	SAND	ND	22.2	ND	ND	3	ND	ND	ND	10.2	ND	ND	ND	2.7	15	0.7	ND	ND	72	ND	8.60
	P2-3	0-12"	COMPOSITE #	ND	42.0	ND	ND	301	ND	10.1	ND	197.9	ND	ND	ND	8.6	169	4.4	ND	ND	1250	ND	8.16
1352-20-34	P2-4	0-5"	SEDIMENT	ND	79.4	ND	ND	445	1	17.9	ND	129.0	ND	ND	ND	14.5	356	5.2	ND	ND	2600	ND	7.80
1352-20-35	P2-4	5-13"	SAND	ND	37.5	ND	ND	5	ND	13.8	ND	9.0	ND	ND	ND	3.2	11	0.8	ND	ND	77	ND	8.10
	P2-4	0-13"	COMPOSITE #	ND	55.1	ND	ND	174	1	13.6	ND	53.2	ND	ND	ND	7.5	156	2.5	ND	ND	1047	ND	7.98
1352-20-19	P2-5	0-5.5"	SEDIMENT	ND	3.5	ND	ND	260	1	10.0	ND	100.0	ND	ND	ND	10.0	220	4.6	ND	ND	2600	ND	8.01
1352-20-20	P2-5	5.5-12"	SAND	ND	21.0	ND	ND	2	ND	ND	2	6.7	ND	ND	ND	5.6	7	3.3	ND	ND	380	ND	8.40
1352-20-21	P2-5	0-12"	COMPOSITE	ND	14.0	ND	ND	100	1	5.7	ND	53.0	ND	ND	ND	7.2	79	2.8	ND	ND	880	ND	8.09
1352-20-36	P2-6	0-10"	SEDIMENT	ND	156.0	ND	2	641	ND	34.8	ND	344.0	ND	ND	ND	23.2	372	9.4	ND	ND	5300	ND	8.40
1352-20-37	P2-6	10-15"	SAND	ND	43.2	ND	ND	1430	ND	70.7	6	10.2	ND	ND	ND	17.8	1520	9.0	1	ND	1800	ND	8.10
	P2-6	0-15"	COMPOSITE #	ND	111.7	ND	2	901	ND	60.1	3	166.1	ND	ND	ND	21.4	821	9.5	ND	ND	2800	ND	8.30

NA = NOT ANALYZED

TABLE 3-2 Continued
EVAPORATION PONDS ANALYSIS RESULTS
EXTRACTION METHOD 3050/3060
TOTAL CONCENTRATIONS, mg/kg

				Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se	F	Cr VI	pH
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Units
EPA METHOD				6010	6010	6010	6010	6010	6010	6010	7421	6010	6010	6010	7841	6010	6010	7060	7470	7740	340.2	7196	9045
DETECTION LIMIT				6.	1.	0.5	0.5	3.	5	3	1.	2.	5.	1.	5.	1.	5.	0.5	0.1	0.5	50	0.2	NA
BACKGROUND STANDARDS				10.0	869.4	0.6	1.5	18.3	8.1	20.2	15.0	6.0	23.7	3.0	15.0	41.7	47.2	3.5	0.6	1.5	362.7	3.0	7.3-10.4
STLC (mg/l)				15	100	0.75	1.0	560	80	25	5.0	350	20	5	7.0	24	250	5	0.2	1.0	100	5	
TTLC (mg/kg)				500	10000	75	100	2500	8000	2500	1000	3500	2000	500	700	2400	5000	500	20	100	18000	500	
SAMPLE NO.	SAMPLE LOCATION	DEPTH (FT)	TYPE																				
											POND 5												
1552-20-59	P5-1	0-2"	SEDIMENT	ND	163	ND(.4)	1	143	15	3	2	7.3	7.9	ND	ND	20.4	123	16.3	ND	ND	2850	ND	8.3
1552-20-22	P5-2	0-4"	SEDIMENT	8	17.0	ND	ND	550	1	15.0	2	130.0	ND	ND	ND	17.0	440	9.9	ND	ND	3700	ND	7.99
1552-20-23	P5-2	4-17"	SAND	ND	20.0	ND	ND	4	1	ND	1	ND	ND	ND	ND	5.6	10	1.2	ND	ND	480	ND	8.44
1552-20-24	P5-2	0-17"	COMPOSITE	ND	17.0	ND	ND	49	1	3.1	2	12.0	ND	ND	ND	3.7	30	2.1	ND	ND	680	ND	8.23
1552-20-61	P5-3	0-9"	SEDIMENT	ND	36	ND(2)	ND(2)	209	ND	10	ND(2)	155.0	ND	ND(2)	ND	7.5	199	4.1	.08(c)	ND	1730	.13(b)	7.5
1552-20-61D	P5-3	0-9"	SEDIMENT	ND	33	ND(2)	ND(2)	140	ND	6	ND(2)	95.1	ND	ND(2)	ND	5.4	127	3.2	ND	ND	1320	ND	5.6
1552-20-62	P5-4	0-6.5"	SEDIMENT	ND	89	ND(2)	ND(2)	104	ND	5	ND(2)	188.0	ND	ND(2)	ND	5.4	78	3.9	ND	ND	1170	ND	7.4
1552-20-63	P5-5	0-8"	SEDIMENT	ND	121	ND(2)	ND(2)	553	5(2)	20	2	91.8	6.6	ND(2)	ND	28.7	631	6.0	.056(c)	1	5730	ND	7.4
1552-20-64	P5-6	0-6"	SEDIMENT	ND	99	ND(2)	ND(2)	354	ND(2)	8	ND(2)	136.0	ND	ND(2)	ND	7.9	164	6.1	ND(c)	ND	966	.13(d)	7.6
											POND 4												
1552-20-58	P4-1	0-1"	SEDIMENT	ND	151.0	ND	ND	742	ND	56.9	ND	115.0	ND	ND	ND	31.2	324	9.4	ND	ND	4300	ND	7.90
1552-20-58D	P4-1	0-1"	SEDIMENT	ND	109.0	ND	ND	356	ND	29.7	ND	112.0	5.9	ND	ND	30.9	250	9.5	ND	1	3230	ND	7.89
1552-20-59	P4-1	1-10"	SAND	ND	101.0	ND	ND	7	2	4.6	ND	6.7	4.9	ND	ND	13.8	16	3.1	ND	ND	350	ND	8.40
1552-20-59D	P4-1	1-10"	SAND	ND	140.0	ND	ND	16	ND	9.3	ND	6.0	6.8	ND	ND	27.4	32	3.2	ND	ND	402	ND	8.60
	P4-1	0-10"	COMPOSITE #	ND	120.8	ND	ND	85	1	9.6	ND	14.1	5.6	ND	ND	21.6	51	3.3	ND	ND	706	ND	8.53
1552-20-25	P4-2	0-5"	SEDIMENT	ND	23.0	ND	ND	250	2	8.4	2	41.0	4.1	ND	ND	13.0	120	6.1	ND	ND	3000	ND	8.03
1552-20-26	P4-2	5-13"	SAND	ND	33.0	ND	ND	4	2	5.1	2	4.5	ND	ND	ND	8.6	11	2.0	ND	ND	540	ND	8.54
1552-20-27	P4-2	0-13"	COMPOSITE	ND	26.0	ND	ND	23	2	3.9	1	11.0	ND	ND	ND	9.6	21	2.5	ND	ND	600	ND	8.51
1552-20-27D	P4-2	0-13"	COMPOSITE	ND	115.0	ND	ND	35	ND	3.5	5	20.0	6.5	ND	ND	17.0	90	3.5	ND	ND	40	ND	8.20
1552-20-40	P4-3	0-5"	SEDIMENT	ND	76.9	ND	ND	837	ND	32.4	ND	327.0	ND	ND	ND	20.4	275	8.8	ND	ND	2200	ND	7.90
1552-20-68	P4-4	0-5"	SEDIMENT	ND	33	ND(2)	ND(2)	503	ND	12	ND(2)	302.0	ND	ND(2)	ND	7.7	183	6.3	ND(c)	ND	1510	ND	7.4
1552-20-68D	P4-4	0-5"	SEDIMENT	ND	33	ND(2)	ND(2)	264	ND	10	ND(2)	267.0	ND	ND(2)	ND	6.6	152	5.5	ND(c)	ND	1250	ND	7.4
1552-20-41	P4-5	0-7"	SEDIMENT	ND	62.5	ND	1	527	ND	17.8	ND	151.0	ND	ND	ND	15.7	355	5.8	ND	ND	3700	ND	7.60
1552-20-42	P4-5	7-13"	SAND	ND	37.5	ND	ND	2	ND	ND	ND	3.5	ND	ND	ND	6.0	9	0.8	ND	ND	76	ND	8.40
	P4-5	0-13"	COMPOSITE #	ND	31.0	ND	ND	385	ND	9.4	ND	72.2	ND	ND	ND	11.2	195	3.5	ND	ND	1459	ND	7.97
1552-20-43	P4-6	0-6"	SEDIMENT	ND	63.0	ND	ND	486	ND	17.9	ND	232	ND	ND	ND	14.8	375	5.8	ND	ND	2600	ND	7.80

NOTE : CONCENTRATION (CONC.) OF COMPOSITE # BASED ON CALCULATION USING THE FOLLOWING EQUATION:
CONC. OF COMPOSITE = (CONC. IN SAND * DEPTH OF SAND LAYER + CONC. IN SEDIMENT * DEPTH OF SEDIMENT LAYER) / (TOTAL DEPTH OF SAND AND SEDIMENT LAYERS)

(a) DETECTION LIMIT = .050 mg/kg
(b) DETECTION LIMIT = 0.10 mg/kg
(c) DETECTION LIMIT = .025 mg/kg
(d) DETECTION LIMIT = 0.09 mg/kg
(e) DETECTION LIMIT = .043 mg/kg

PG&E
TOPOCK COMPRESSOR STATION
PHASE 3, PONDS CLOSURE

TABLE 3-3
EVAPORATION PONDS ANALYSIS RESULTS
SOLUBLE CONCENTRATIONS, mg/l
WASTE EXTRACTION TEST - CITRATE

FEBRUARY 1992
REV: 1
R17AA.WK1

				Sb	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Ag	Tl	V	Zn	As	Hg	Se
EPA METHOD				6010	6010	6010	6010	6010	6010	6010	7421	6010	6010	6010	7841	6010	6010	7060	7470	7740
DETECTION LIMIT				0.2	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.04	0.1	0.5	0.2	0.1	0.005	0.005	0.01
RTLC (mg/l)				15	100	0.75	1.0	560	80	25	5.0	350	20	5	7.0	24	250	5	0.2	1.0
SAMPLE N	SAMPLE LOCATION	DEPTH	TYPE																	
									POND 1											
1552-20-01	P1-1	0-3"	SEDIMENT	ND	4.8	ND	ND	65	ND	5.8	ND	12	ND	ND	ND	5.5	74	1.1	ND	ND
1552-20-02	P1-1	3.5-11.5"	SAND	ND	2.3	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	ND	ND
1552-20-03	P1-1	0-12.5"	COMPOST	ND	2.3	ND	ND	25	ND	2.1	ND	1.8	ND	ND	ND	0.74	75	0.24	ND	ND
1552-20-44	P1-1	0-3"	SEDIMENT	NA	NA	NA	NA	34.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1552-20-04	P1-2	0-2"	SEDIMENT	ND	6.1	ND	ND	13	ND	0.83	ND	5.1	ND	ND	ND	0.96	30	0.22	ND	ND
1552-20-05	P1-2	2-12"	SAND	ND	1.8	ND	ND	0.55	ND	ND	1.1	ND	ND	ND	ND	ND	ND	0.02	ND	ND
1552-20-06	P1-2	0-12"	COMPOST	ND	2.9	ND	ND	3.0	ND	ND	ND	ND	ND	ND	ND	ND	7.2	0.06	ND	ND
1552-20-07	P1-3	0-1.5"	SEDIMENT	ND	0.64	ND	ND	54	ND	5.9	ND	5.5	ND	ND	ND	2.5	130	0.63	ND	0.02
1552-20-08	P1-3	1.5-12"	SAND	ND	1.7	ND	ND	1.0	ND	ND	ND	ND	ND	ND	ND	ND	2.1	0.06	ND	ND
1552-20-09	P1-3	0-12"	COMPOST	ND	2.2	ND	ND	6.8	ND	ND	ND	ND	ND	ND	ND	ND	13	0.10	ND	ND
1552-20-10	P1-4	0-4"	SEDIMENT	ND	ND	ND	ND	62	ND	3.1	ND	8.3	ND	ND	ND	3.2	96	0.58	ND	0.02
1552-20-10	P1-4	0-4"	SEDIMENT	ND	0.49	ND	ND	33.1	0.02	2.53	ND	9.94	ND(0.5)	ND	ND(1.0)	1.69	49.9	0.20	ND	ND
1552-20-11	P1-4	4-12"	SAND	ND	1.3	ND	ND	.72	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05	ND	ND
1552-20-12	P1-4	0-12"	COMPOST	ND	1.8	ND	ND	22	ND	1.1	ND	3.6	ND	ND	ND	0.84	28	0.25	ND	ND
1552-20-13	P1-5	0-3"	SEDIMENT	ND	ND	ND	ND	90	ND	2.6	ND	7.2	0.21	ND	ND	2.6	95	0.93	ND	0.02
1552-20-14	P1-5	3-15"	SAND	ND	0.93	ND	ND	4.6	ND	ND	ND	1.6	ND	ND	ND	ND	4.7	0.07	ND	ND
1552-20-15	P1-5	0-15"	COMPOST	ND	1.5	ND	ND	19	ND	1.0	ND	6.1	ND	ND	ND	0.52	51	0.22	ND	ND
1552-20-43	P1-5	0-4"	SEDIMENT	NA	NA	NA	NA	37.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1552-20-16	P1-6	0-0.25"	SEDIMENT	ND	2.2	ND	ND	7.3	ND	0.87	ND	6.8	ND	ND	ND	ND	10	0.27	ND	ND
1552-20-17	P1-6	0.25-14"	SAND	ND	2.2	ND	ND	4.9	ND	ND	ND	ND	ND	ND	ND	ND	12	0.09	ND	ND
1552-20-17	P1-6	0.25-14"	SAND	ND(1.0)	1.98	ND(0.1)	ND(0.1)	4.74	ND(0.5)	0.31	ND(0.5)	ND(0.5)	ND(0.5)	ND	ND(1.0)	0.30	10.9	0.05	ND	ND
1552-20-18	P1-6	0-14"	COMPOST	ND	2.1	ND	ND	7	ND	ND	ND	ND	ND	ND	ND	ND	15	0.09	ND	ND
									POND 2											
1552-20-19	P2-5	0-3.5"	SEDIMENT	ND	ND	ND	ND	15	ND	ND	ND	11	ND	ND	ND	0.86	16	0.40	ND	ND
1552-20-20	P2-5	3.5-12"	SAND	ND	1.7	ND	ND	ND	ND	ND	ND	0.81	ND	ND	ND	ND	ND	0.05	ND	ND
1552-20-21	P2-5	0-12"	COMPOST	ND	1.6	ND	ND	4.7	ND	ND	ND	4.6	ND	ND	ND	ND	4.3	0.16	ND	ND
									POND 3											
1552-20-22	P3-2	0-4"	SEDIMENT	ND	3.4	ND	ND	9.5	ND	ND	ND	5.5	ND	ND	ND	0.54	ND	0.40	ND	ND
1552-20-23	P3-2	4-17"	SAND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	ND	ND
1552-20-24	P3-2	0-17"	COMPOST	ND	1.9	ND	ND	2.7	ND	ND	ND	0.81	ND	ND	ND	ND	4.9	0.10	ND	ND
									POND 4											
1552-20-25	P4-2	0-3"	SEDIMENT	ND	2.7	ND	ND	12	ND	ND	ND	4.4	ND	ND	ND	0.65	8.6	0.29	ND	ND
1552-20-26	P4-2	3-15"	SAND	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06	ND	ND
1552-20-27	P4-2	0-15"	COMPOST	ND	2.4	ND	ND	3.0	ND	ND	ND	2.0	ND	ND	ND	ND	1.5	0.13	ND	ND
1552-20-27	P4-2	0-15"	COMPOST	ND(1.0)	2.67	ND(0.1)	ND(0.1)	1.74	ND(0.5)	0.10	ND(0.5)	2.00	ND(0.5)	ND	ND(1.0)	0.31	1.75	0.03	ND	ND

NA = NOT ANALYZED

PG&E
TOPOCK COMPRESSOR STATION
PHASE 3, PONDS CLOSURE

TABLE 3-4
EVAPORATION PONDS ANALYSIS RESULTS
SOLUBLE CONCENTRATIONS, mg/l
WASTE EXTRACTION TEST - DEIONIZED WATER

FEBRUARY 1992
REV: 1
BX-D9M3.WK1

				Sb	Cr	Cu	Mo	Zn	As	F	Cr VI	pH	Total Dissolved Solids	Electrical Conductivity umhos/cm
EPA METHOD				6010	6010	6010	6010	6010	7060	340.2	7196	9040	160.1	9050
DETECTION LIMIT				0.5	0.05	0.05	0.05	0.10	0.005	0.1	0.05	NA	10	2
BACKGROUND STANDARDS				0.18	0.06	0.06	0.06	0.06	0.014	1.33	0.15	11.6	580	2622
SAMPLE NO.	SAMPLE LOCATION	DEPTH (FT)	TYPE											
						POND 1								
1352-20-01	P1-1	0-3"	SEDIMENT	ND	ND	ND	2.0	ND	0.14	12	ND	7.68	6,500	52,100
1352-20-02	P1-1	3.5-11.5"	SAND	ND	ND	ND	ND	ND	0.008	4.8	ND	8.97	90	1,600
1352-20-03	P1-1	0-12.5"	COMPOSITE	ND	ND	ND	0.5	ND	0.03	4.9	ND	7.90	790	7,900
1352-20-04	P1-2	0-2"	SEDIMENT	ND	ND	ND	0.72	ND	0.03	6.7	ND	7.67	3,400	33,400
1352-20-05	P1-2	2-12"	SAND	1.0	ND	ND	ND	ND	ND	2.6	ND	8.69	180	2,200
1352-20-06	P1-2	0-12"	COMPOSITE	ND	ND	ND	ND	ND	0.008	4.7	ND	8.76	340	5,100
1352-20-07	P1-3	0-1.5"	SEDIMENT	ND	ND	ND	2.2	ND	0.06	9.0	ND	7.45	11,000	69,300
1352-20-08	P1-3	1.5-12"	SAND	ND	ND	ND	ND	ND	0.006	1.9	ND	8.66	260	3,900
1352-20-09	P1-3	0-12"	COMPOSITE	ND	ND	ND	0.33	ND	0.01	2.1	ND	7.74	2,030	14,700
1352-20-10	P1-4	0-4"	SEDIMENT	ND	ND	ND	1.4	ND	0.03	6.5	0.04	7.50	7,800	46,900
1352-20-10D	P1-4	0-4"	SEDIMENT	ND	0.14	0.02	1.34	0.06	0.01	*	ND(1.0)	*	*	87,933
1352-20-11	P1-4	4-12"	SAND	ND	ND	ND	0.4	ND	0.008	1.2	ND	8.47	490	7,000
1352-20-12	P1-4	0-12"	COMPOSITE	ND	ND	ND	0.54	ND	0.01	3.2	0.03	7.73	4,030	21,700
1352-20-13	P1-5	0-5"	SEDIMENT	ND(.01)	ND(.02)	ND	5	0.02	0.06	5.7	ND	7.49	8,800	52,700
1352-20-14	P1-5	5-13"	SAND	ND(.01)	ND(.02)	ND	0.73	ND(.02)	0.008	0.7	ND	8.23	1,600	16,000
1352-20-15	P1-5	0-13"	COMPOSITE	ND(.01)	ND(.02)	ND	1.9	ND(.02)	0.02	1.9	ND	7.78	4,400	27,400
1352-20-16	P1-6	0-0.25"	SEDIMENT	ND	ND	ND	1.1	ND	0.06	9.1	ND	7.20	5,010	21,600
1352-20-17	P1-6	0.25-14"	SAND	ND	ND	ND	ND	ND	ND	1.6	0.04	8.52	1,200	4,900
1352-20-17D	P1-6	0.25-14"	SAND	ND	0.02	0.01	0.10	0.01	ND(0.01)	*	ND(1.0)	*	*	10,497
1352-20-18	P1-6	0-14"	COMPOSITE	ND	ND	ND	ND	ND	0.008	2.5	0.03	7.91	1,600	8,300
						POND 2								
1352-20-28	P2-1	0-5"	SEDIMENT	ND	ND	ND	37.6	ND	0.320	4.70	ND	7.80	18,900	62,800
1352-20-29	P2-1	5-13"	SAND	ND	ND	ND	0.9	ND	0.010	0.90	ND	9.20	5,600	45,100
	P2-1	0-13"	COMPOSITE #	ND	ND	ND	15.0	ND	0.129	2.36	ND	8.66	10,715	51,908
1352-20-30	P2-2	0-7"	SEDIMENT	ND	0	ND	39.1	ND	0.470	4.30	ND	7.90	10,300	42,400
1352-20-31	P2-2	7-15"	SAND	ND	ND	ND	1.3	ND	0.006	0.69	ND	8.30	1,540	14,900
	P2-2	0-15"	COMPOSITE #	ND	ND	ND	18.9	ND	0.223	2.37	ND	8.11	5,628	27,733
1352-20-32	P2-3	0-5"	SEDIMENT	ND	ND	ND	44.1	ND	0.420	5.90	ND	7.90	19,500	84,900
1352-20-33	P2-3	5-12"	SAND	ND	ND	ND	0.9	ND	0.009	0.81	ND	9.30	4,570	38,100
	P2-3	0-12"	COMPOSITE #	ND	ND	ND	18.9	ND	0.180	2.93	ND	8.72	10,791	57,600
1352-20-34	P2-4	0-5"	SEDIMENT	ND	ND	ND	9.4	ND	0.037	3.80	ND	8.20	11,900	76,700
1352-20-35	P2-4	5-13"	SAND	ND	ND	ND	0.8	ND	0.005	1.00	ND	9.30	1,570	11,300
	P2-4	0-13"	COMPOSITE #	ND	ND	ND	4.1	ND	0.017	2.08	ND	8.88	5,343	36,454
1352-20-19	P2-5	0-3.5"	SEDIMENT	ND	ND	ND	9	ND	0.15	7.5	ND	7.60	11,000	64,400
1352-20-20	P2-5	3.5-12"	SAND	ND	ND	ND	0.81	ND	ND	1.7	ND	8.41	2,100	25,200
1352-20-21	P2-5	0-12"	COMPOSITE	ND	ND	ND	4.2	ND	0.07	4.5	ND	7.82	7,000	47,300
1352-20-36	P2-6	0-10"	SEDIMENT	ND	ND	ND	17.1	ND	0.120	3.20	ND	8.00	10,790	51,400
1352-20-37	P2-6	10-15"	SAND	ND	ND	ND	2.1	ND	0.084	2.90	ND	8.50	5,950	31,200
	P2-6	0-15"	COMPOSITE #	ND	ND	ND	12.1	ND	0.108	3.10	ND	8.17	9,177	44,667

TABLE 3-4 Continued
EVAPORATION PONDS ANALYSIS RESULTS
SOLUBLE CONCENTRATIONS, mg/l
WASTE EXTRACTION TEST - DEIONIZED WATER

				Sb	Cr	Cu	Mo	Zn	As	F	Cr VI	pH	Total Dissolved Solids	Electrical Conductivity umhos/cm
EPA METHOD				6010	6010	6010	6010	6010	7060	340.2	7196	9040	160.1	9050
DETECTION LIMIT				0.5	0.05	0.05	0.05	0.10	0.005	0.1	0.05	NA	10	2
BACKGROUND STANDARDS				0.18	0.06	0.06	0.06	0.06	0.014	1.33	0.15	11.6	580	2622
SAMPLE NO.	SAMPLE LOCATION	DEPTH (FT)	TYPE											
						POND 3								
1352-20-59	P3-1	0-2"	SEDIMENT	NA	NA	NA	NA	NA	NA	6.4	NA	8.3	NA	NA
1352-20-22	P3-2	0-4"	SEDIMENT	ND	ND	ND	4.8	ND	0.14	8.3	ND	7.83	8,400	69,300
1352-20-23	P3-2	4-17"	SAND	ND	ND	ND	ND	ND	ND	1.1	0.17	8.43	5,600	43,800
1352-20-24	P3-2	0-17"	COMPOSITE	ND	ND	ND	1.6	ND	0.04	3.4	ND	8.03	4,700	46,800
1352-20-63	P3-5	0-8"	SEDIMENT	NA	NA	NA	NA	NA	NA	5.3	NA	7.4	NA	NA
						POND 4								
1352-20-38	P4-1	0-1"	SEDIMENT	ND	ND	ND	10.1	ND	0.100	6.20	ND	8.50	16,600	89,100
1352-20-38D	P4-1	0-1"	SEDIMENT	ND	ND	0.02	0.65	0.02	0.010	26.8	ND	7.63	18,218	64,790
1352-20-39	P4-1	1-10"	SAND	ND	ND	ND	0.5	ND	0.013	1.90	ND	9.60	2,110	19,400
1352-20-39D	P4-1	1-10"	SAND	ND	ND	0.02	0.67	0.01	0.010	7.6	ND	8.14	2,611	22,580
	P4-1	0-10"	COMPOSITE #	ND	ND	0.02	1.07	0.01	0.016	5.93	ND	8.79	3,865	13,187
1352-20-25	P4-2	0-3"	SEDIMENT	ND	ND	ND	6.4	ND	0.09	5.8	ND	7.58	7,500	55,300
1352-20-26	P4-2	3-15"	SAND	ND	ND	ND	0.83	ND	0.02	2.0	.17	9.18	2,000	25,800
1352-20-27	P4-2	0-15"	COMPOSITE	ND	ND	ND	2.4	ND	0.03	3.9	0.06	8.23	3,600	37,200
1352-20-27D	P4-2	0-15"	COMPOSITE	ND	0.02	0.01	2.01	0.01	0.02	*	ND(1.0)	*	*	57,252
1352-20-40	P4-3	0-5"	SEDIMENT	ND	ND	ND	21.7	ND	0.180	4.70	ND	8.30	18,800	70,800
1352-20-41	P4-5	0-7"	SEDIMENT	ND	ND	ND	14.9	ND	0.076	4.80	ND	8.00	11,800	54,100
1352-20-42	P4-5	7-13"	SAND	ND	ND	NO	0.5	ND	0.005	1.10	ND	9.10	3,740	26,100
	P4-5	0-13"	COMPOSITE #	ND	ND	ND	8.3	ND	0.043	3.09	ND	8.51	8,080	41,177
1352-20-43	P4-6	0-6"	SEDIMENT	ND	ND	ND	17.6	ND	0.100	3.80	ND	8.30	14,300	49,400

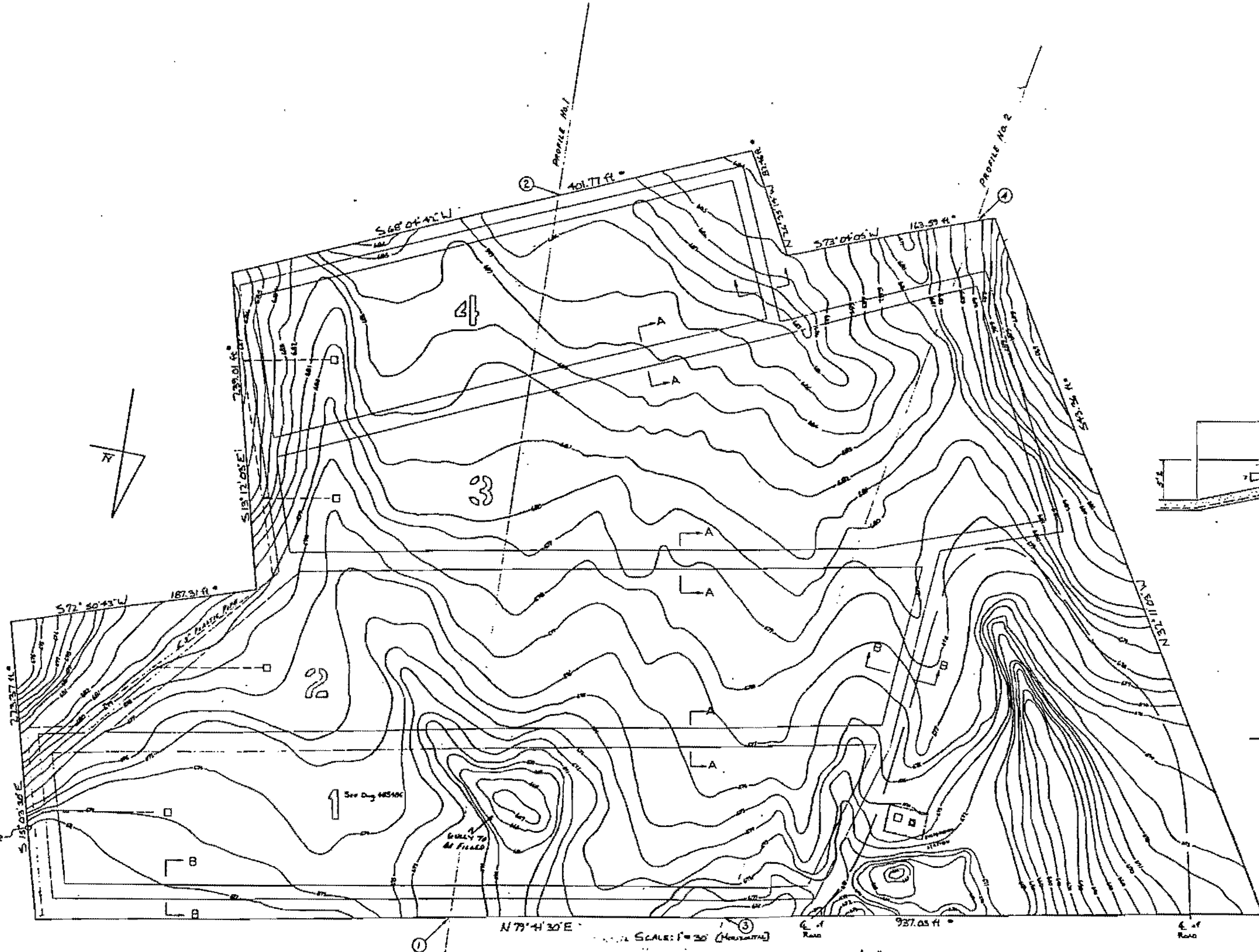
NOTE : CONCENTRATION (CONC.) OF COMPOSITE # BASED ON CALCULATION USING THE FOLLOWING EQUATION:

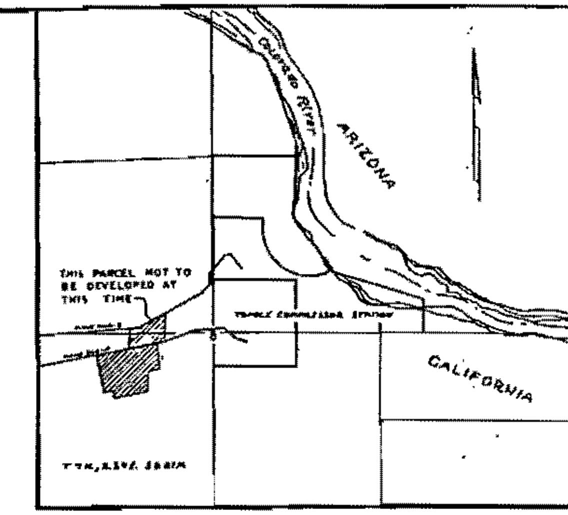
CONC. OF COMPOSITE = (CONC. IN SAND * DEPTH OF SAND LAYER + CONC. IN SEDIMENT * DEPTH OF SEDIMENT LAYER) / (TOTAL DEPTH OF SAND AND SEDIMENT LAYERS)

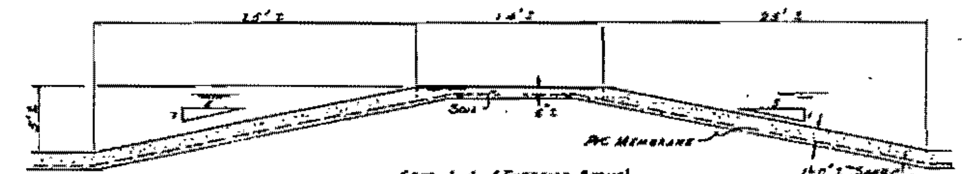
NA = NOT ANALYZED

APPENDIX II

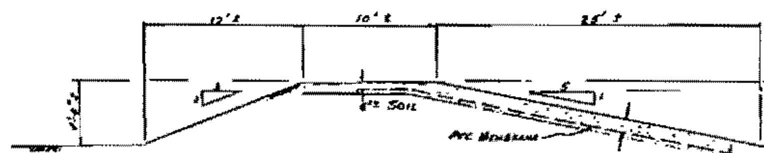
POND CONSTRUCTION DRAWINGS AND DETAILS







SECT. A-A (INTERIOR BERMS)
SCALE: 1" = 5'-0"



SECT. B-B (EXTERIOR BERMS)
SCALE: 1" = 5'-0"

NOTE: 1. TOPOGRAPHIC SURVEY TAKEN BY T.H. [illegible] AND R.E. PRATT ON 8/4-5/70.
ALL ELEVATIONS SHOWN ARE WITH RESPECT TO SEA LEVEL.
2. THE LANDS SHOWN ON THIS MAP ARE NOT SUBJECT TO INNUNDATION BY FLOOD WATERS
3. *DIMENSIONS ARE NOT NECESSARILY TO SCALE

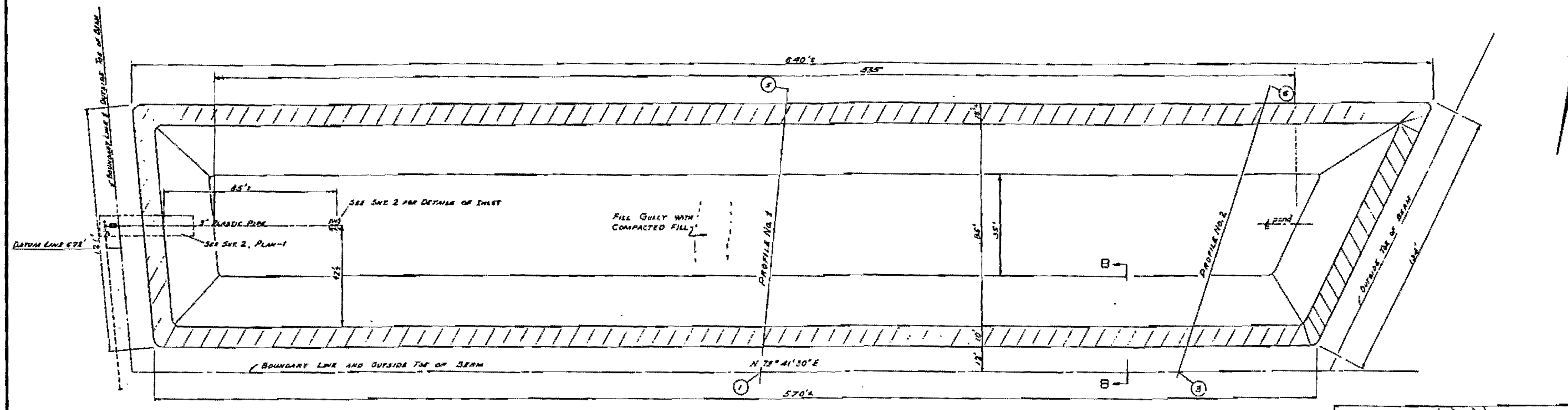
REFERENCES:
PROFILES #1 & 2 DWG. 485440
CONST. DETAILS POND #1 DWG. 485486

TABLE OF CHANGES

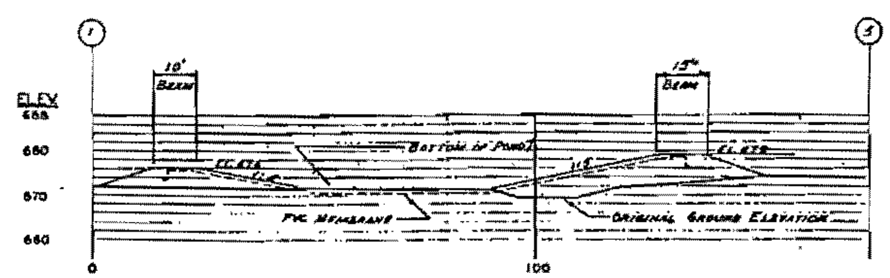
GM 172520
DRAWN THIZ
DATE 9-16-70
SCALE AS SHOWN

GENERAL OUTLINE OF EVAPORATION PONDS
FOR WASTE WATER DISPOSAL SYSTEM
9 ACRE PLOT WEST OF TOPOCK COMP. STATION
GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

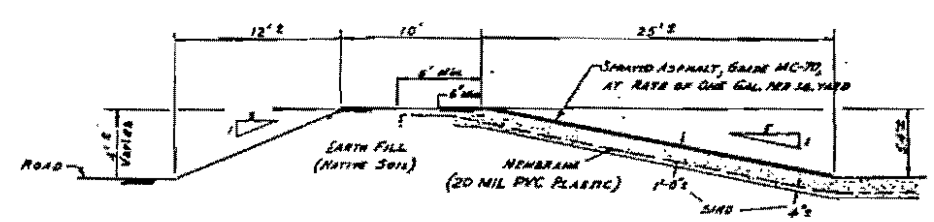
581070



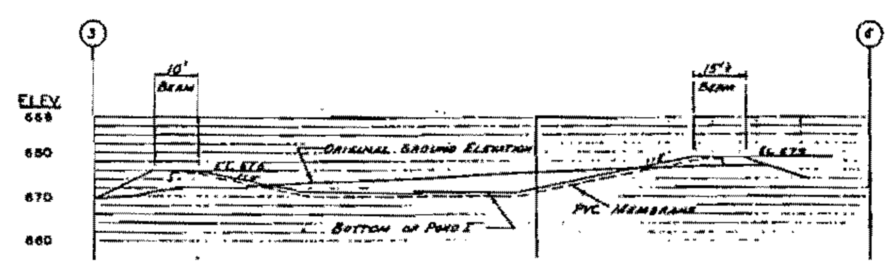
PLAN
SCALE: 1"=20'



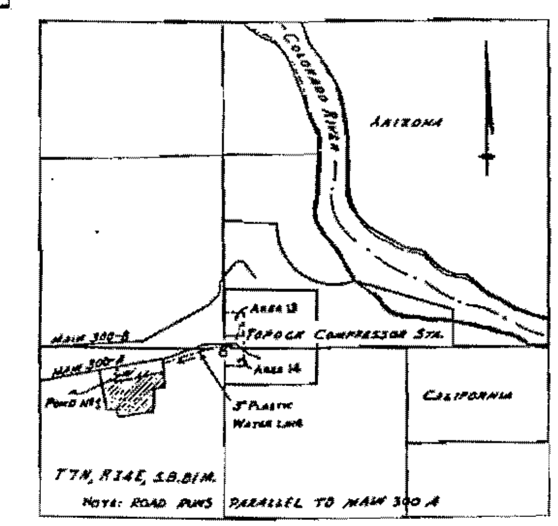
PROFILE - 1
SCALE: 1/16"=1'-0"



TYPICAL BERM SECT. B-B
SCALE: 1"= 5'-0"



PROFILE - 2
SCALE: 1/16"=1'-0"



REFERENCES:

1. OUTLINE OF EVAPORATION PONDS — DWG. 581070
2. PROFILES OF " " — " 485640
3. EVAPORAT. POND NO.1 — " 485486 SHT. 1
4. ARRANGEMENT OF PUMPS, FILTERS & PIPING, AREAS 13 & 14 - TOPOCK C.STA. — " 386122
5. LOCATION PLAN OF TANKS, EQUIPMENT & PIPING, AREAS 13 & 14 - TOPOCK C.STA. — " 485352
6. FLOW DIAGRAM - WASTE WATER WELL DR.SYS. 386121

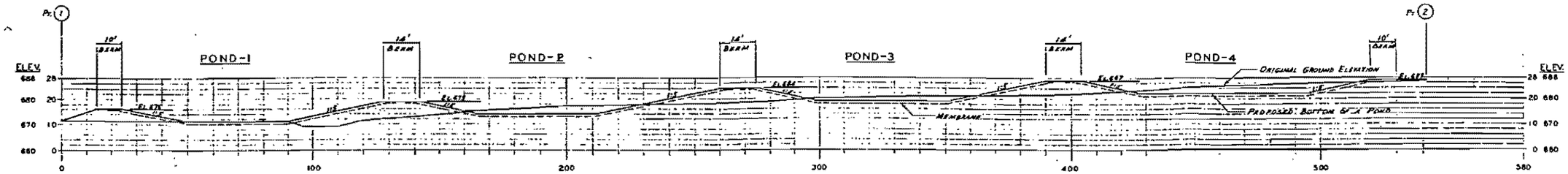
P.L.O.

STRUCTURE - DETAILS
EVAPORATION POND NO.1
ACRE PLOT WEST OF TOPOCK COMPRESSOR STA.
TOPOCK COMPRESSOR STATION

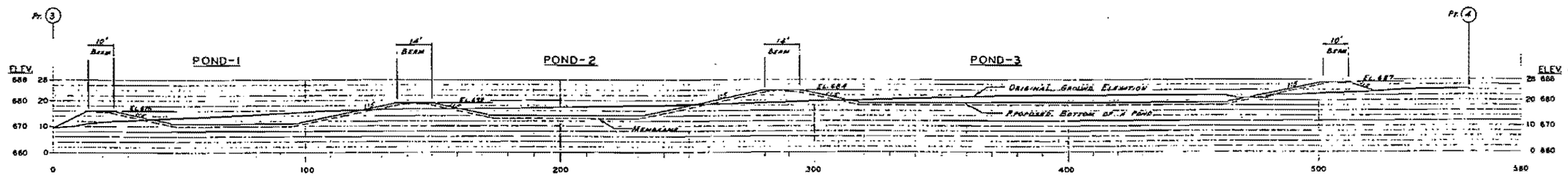
GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

TABLE OF CHANGES

485486 2



PROFILE-1 DWG. 581070
SCALE: 1/8"=2'-0"



PROFILE-2 DWG. 581070
SCALE: 1/8"=2'-0"

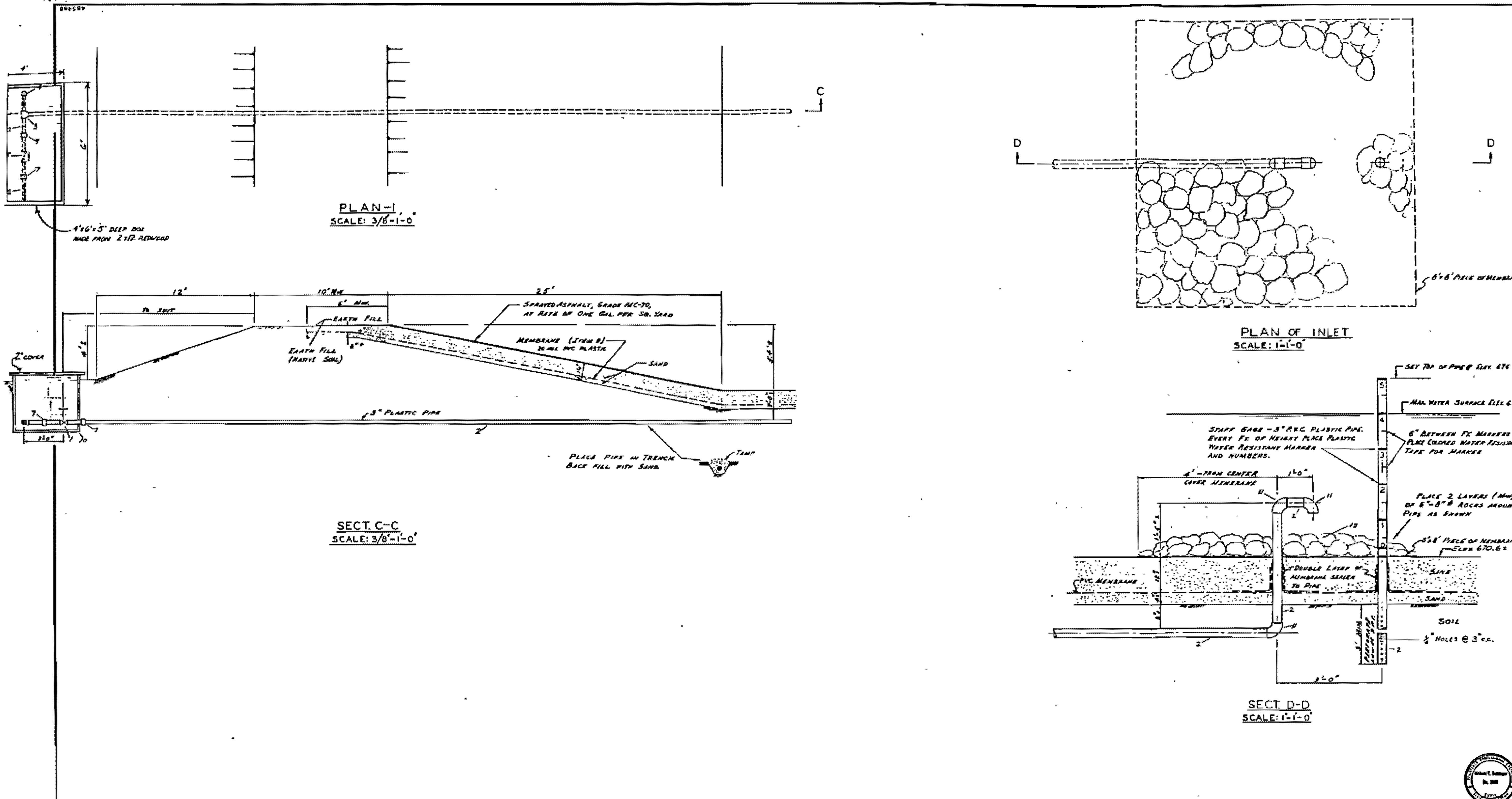
REFERENCES:
OUTLINE OF EVAPORATION PONDS DWG. 581070

P.L.O.

TABLE OF CHANGES	TABLE OF CHANGES	DM 172520
		AS SHOWN

PROFILES OF EVAPORATION PONDS FOR WASTE WATER DISPOSAL SYSTEM, 9 ACRE PLOT WEST OF TOPOCK COMP. STATION
GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

485440



P.L.O.

PIPELINE OPERATIONS

TABLE OF CHANGES	TABLE OF CHANGES

GM 172520

STRUCTURE - DETAILS
EVAPORATION POND NO.1
8 ACRE PLOT WEST OF TOPOCK COMPRESSOR STA.
TOPOCK COMPRESSOR STATION

GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATERIAL 085208
082272

SHEET NO. 1 2 SHEETS

485486 2

APPENDIX III

ANALYTICAL RESULTS FOR OIL CONTAINING LINER COVER SAND SAMPLES

POND 1 LINER SAMPLES, AND WASTEWATER INFLUENT PIPE WATER SAMPLE

POND 2 OIL SAMPLE (SAMPLE P2-OIL)

THE TWINING LABORATORIES, INC.
EST. 1898
ANALYTICAL CHEMISTRY • ENVIRONMENTAL SERVICES
GEOTECHNICAL ENGINEERING • DRILLING SERVICES
CONSTRUCTION INSPECTION & MATERIALS TESTING

REPORT DATE : October 5, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID : 693-5536.1

DATE SAMPLED : 09-27-93 at 1352 by M. Goodwin
DATE RECEIVED : 09-29-93 at 1230 via UPS

CLIENT : Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT : Pacific Gas & Electric- Topock
Topock, CA
TL# : 393-0189-01

The Twining Laboratories is accredited by the State of California Department of Health Services for the analysis of Drinking Water, Wastewater and Hazardous Waste under Certificate No. 1371.

In accordance with your instructions, the samples submitted were analyzed for the components specified. All samples analyzed were submitted in good condition. The analytical results are enclosed on the following pages.

Please contact us if you have any questions concerning the analyses or results. Thank you for letting us serve you.

Authorized Signature
The Twining Laboratories, Inc.
Chemistry Division

RBF:mrl

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Bakersfield, CA 93308
(805) 393-5088
Fax 393-4643

THE TWINING LABORATORIES, INC.
EST. 1898
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CLIENT : Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT : Pacific Gas & Electric- Topock
Topock, CA
TL# : 393-0189-01

ANALYZED BY : B. Meadows, A. Holman
REVIEWED BY : R. Stafford

DATE PREPARED : 09-29-93
DATE ANALYZED : 09-30-93 SAMPLE TYPE : Soil

CLIENT SAMPLE ID: P2-Oil

CONSTITUENT	RESULTS (mg/kg)	DLR (mg/kg)	METHOD
Total Recoverable Petroleum Hydrocarbons (TRPH)	85000	10000	418.1 Mod
Polychlorinated Biphenyl (PCB)	ND	1	EPA 8080

CALIFORNIA DEPARTMENT OF HEALTH SERVICES CERTIFICATE NO. 1371
mg/kg: milligrams per kilogram (parts per million)
ND: None Detected
DLR: Detection Limit for Reporting purposes

mrl

Robert W. Stafford
Organic Supervisor

Debra K. Lehman
QA Manager

Rev. 1 8/93 (FORM2.ORG)

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CLIENT : Allwaste Transportation and Remediation

PROJECT : Pacific Gas & Electric- Topock
Topock, CA
TL# : 393-0189-01

DATE PREPARED: 09-29-93
DATE ANALYZED: 09-29-93
ANALYZED BY : R. Cortez
REVIEWED BY : R. Stafford

SAMPLE TYPE : Soil
SAMPLE IDENTIFICATION: P2-Oil

METHOD: EPA 8270

	RESULT (ug/kg)	MDL (ug/kg)
Acenaphthene	ND	330
Acenaphthylene	ND	330
Aniline	ND	330
Anthracene	ND	330
Benzidine	ND	660
Benzoic acid	ND	330
Benzo(a) anthracene	ND	330
Benzo(b) fluoranthene	ND	330
Benzo(k) fluoranthene	ND	330
Benzo(g,h,i) perylene	ND	330
Benzo(a) pyrene	ND	330
Benzyl alcohol	ND	330
Bis(2-chloroethoxy) methane	ND	330
Bis(2-chloroethyl) ether	ND	330
Bis(2-chloroisopropyl) ether	ND	330
Bis(2-ethylhexyl) phthalate	ND	330
4-Bromophenyl phenyl ether	ND	330
Butyl benzyl phthalate	ND	330
4-Chloroaniline	ND	330
2-Chloronaphthalene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Chlorophenol	ND	330

NOTES:
ug/kg: micrograms per Kilogram (parts per billion)
MDL : Method Detection Limit
ND : None Detected

REPORT DATE : October 5, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID : 693-5536.1

DATE SAMPLED : 09-27-93 at 1352 by M. Goodwin
DATE RECEIVED : 09-29-93 at 1230 via UPS

CLIENT : Allwaste Transportation and Remediation

PROJECT : Pacific Gas & Electric- Topock
Topock, CA
TL# : 393-0189-01

DATE PREPARED: 09-29-93
DATE ANALYZED: 09-29-93
ANALYZED BY : R. Cortez
REVIEWED BY : R. Stafford

SAMPLE TYPE : Soil
SAMPLE IDENTIFICATION: P2-Oil
METHOD: EPA 8270

	RESULT (ug/kg)	MDL (ug/kg)
4-Chlorophenyl phenyl ether	ND	330
Chrysene	ND	330
Dibenzo(a,h,) anthracene	ND	330
Dibenzofuran	ND	330
Di-n-butylphthalate	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
3,3'-Dichlorobenzidine	ND	330
2,4-Dichlorophenol	ND	330
2,6-Dichlorophenol	ND	330
Diethylphthalate	ND	330
Dimethylphthlalate	ND	330
2,4-Dimethylphenol	ND	330
4,6-Dinitro-2-methylphenol	ND	330
2,4-Dinitrophenol	ND	660
2,4-Dinitrotoluene	ND	330
2,6-Dinitrotoluene	ND	330
1,2-Diphenylhydrazine(Azobenzene)	ND	330
Di-n-octylphthalate	ND	330
Fluoranthene	ND	330
Fluorene	ND	330

NOTES:
ug/kg: micrograms per Kilogram (parts per billion)
MDL : Method Detection Limit
ND : None Detected

REPORT DATE : October 5, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID : 693-5536.1

DATE SAMPLED : 09-27-93 at 1352 by M. Goodwin
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DATE PREPARED: 09-29-93
DATE ANALYZED: 09-29-93
ANALYZED BY : R. Cortez
REVIEWED BY : R. Stafford

SAMPLE TYPE : Soil
SAMPLE IDENTIFICATION: P2-Oil
METHOD: EPA 8270

	RESULT (ug/kg)	MDL (ug/kg)
Hexachlorobenzene	ND	330
Hexachlorobutadine	ND	330
Hexachlorocyclopentadiene	ND	330
Hexachloroethane	ND	330
Indeno(1,2,3-cd) pyrene	ND	330
Isophorone	ND	330
2-Methylnaphthalene	13000	8250
2-Methylphenol (o-cresol)	ND	330
4-Methylphenol (p-cresol)	ND	330
Naphthalene	51000	8250
2-Nitroaniline	ND	330
3-Nitroaniline	ND	330
4-Nitroaniline	ND	330
Nitrobenzene	ND	330
2-Nitrophenol	ND	660
4-Nitrophenol	ND	330
N-Nitrosodimethylamine	ND	330
N-Nitrosodiphenylamine	ND	330
N-Nitrosodi-n-propylamine	ND	330
Pentachlorophenol	ND	330
Phenanthrene	ND	330
Phenol	ND	330
Pyrene	ND	330
1,2,4-Trichlorobenzene	ND	330
2,4,5-Trichlorophenol	ND	330
2,4,6-Trichlorophenol	ND	330

NOTES:
ug/kg: micrograms per Kilogram (parts per billion)
MDL : Method Detection Limit
ND : None Detected

REPORT DATE : October 5, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID : 693-5536.1

DATE SAMPLED : 09-27-93 at 1352 by M. Goodwin
DATE RECEIVED : 09-29-93 at 1230 via UPS

CLIENT : Allwaste Transportation and Remediation

PROJECT : Pacific Gas & Electric- Topock
Topock, CA
TL# : 393-0189-01

DATE PREPARED: 09-29-93
DATE ANALYZED: 09-29-93
ANALYZED BY : R. Cortez
REVIEWED BY : R. Stafford

SAMPLE TYPE : Soil
SAMPLE IDENTIFICATION: P2-Oil
METHOD: EPA 8270

CONSTITUENT	RESULT (ug/kg)	MDL (ug/kg)
Aldrin	ND	330
a-BHC	ND	330
b-BHC	ND	330
d-BHC	ND	330
g-BHC (Lindane)	ND	330
DDD	ND	330
DDE	ND	330
DDT	ND	330
Dieldrin	ND	330
Endosulfan I	ND	330
Endosulfan II	ND	330
Endosulfan Sulfate	ND	330
Endrin	ND	330
Endrin aldehyde	ND	330
Heptachlor	ND	330
Heptachlor epoxide	ND	330

NOTES:
ug/kg: micrograms per Kilogram (parts per billion)
MDL : Method Detection Limit
ND : None Detected

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / Fax (415) 821-7123

THE TWINING LABORATORIES, INC.
Attn: MICKEY LEAR

Project NONE
Reported 04-October-1993

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by GAS CHROMATOGRAPHY - MASS SPECTROMETRY

Chronology

Laboratory Number 57153

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
693-5536.1	09/27/93	10/01/93	/ /	10/03/93		1

Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT: Pacific Gas & Electric-Tompock
Tompock, CA

TL#393-0189-01

SAMPLE ID: P2-Oil

Project Mgr: Walt Plachta

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

THE TWINING LABORATORIES, INC.
Attn: MICKEY LEAR

Project NONE
Reported 04-October-1993

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS

Laboratory Number	Sample Identification	Matrix
57153- 1	693-5536.1 Allwaste Transportation and Remediation PG&E-Tompock ID: P2-Oil	Soil

RESULTS OF ANALYSIS

Laboratory Number: 57153- 1

Chloromethane:	ND<50
Bromomethane:	ND<50
Vinyl Chloride:	ND<50
Chloroethane:	ND<50
Methylene Chloride:	ND<50
Acetone:	ND<100
Carbon Disulfide:	ND<15
Trichlorofluoromethane:	ND<15
1,1-Dichloroethene:	ND<15
1,1-Dichloroethane:	ND<15
t-1,2-Dichloroethene:	ND<15
Chloroform:	ND<15
1,2-Dichloroethane:	ND<5
2-Butanone:	ND<100
1,1,1-Trichloroethane:	ND<15
Carbon tetrachloride:	ND<15
Vinyl Acetate:	ND<50
Bromodichloromethane:	ND<15
1,2-Dichloropropane:	ND<15
c-1,2-Dichloroethene:	ND<15
c-1,3-Dichloropropene:	ND<15
Trichloroethene:	ND<15
Dibromochloromethane:	ND<15
1,1,2-Trichloroethane:	ND<15
Benzene:	ND<5
t-1,3-Dichloropropene:	ND<15
Bromoform:	ND<15
4-Methyl-2-Pentanone:	ND<50
2-Hexanone:	ND<50

Concentration: ug/kg

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THE TWINING LABORATORIES, INC.
Attn: MICKEY LEAR

Project NONE
Reported 04-October-1993

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS

Laboratory Number	Sample Identification	Matrix
57153- 1	693-5536.1 Allwaste Transportation and Remediation PG&E-Tompock ID: P2-Oil	Soil

RESULTS OF ANALYSIS

Laboratory Number: 57153- 1

Tetrachloroethene:	ND<15
1,1,2,2-Tetracl-ethane:	ND<15
Toluene:	ND<15
Chlorobenzene:	ND<15
Ethyl Benzene:	ND<15
Styrene:	ND<15
Xylenes:	ND<15
1,3-Dicnlorobenzene:	ND<15
1,4-Dichlorobenzene:	ND<15
1,2-Dichlorobenzene:	ND<15

Concentration: ug/kg

-- Surrogate Recoveries --

1,2-Dichloroethane-d4:	99%
Toluene-d8:	100%
Bromofluorobenzene:	101%

Superior Precision Analytical, Inc.
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EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
Quality Assurance and Control Data - Soil

Laboratory Number 57153
Allwaste Transportation and Remediation
PG&E- Tompock P2-Oil

Compound	Method Blank (ug/kg)	RL (ug/kg)	Average Spike Recovery (%)	Limits (%)	RPD (%)
Chloromethane:	ND<50	50			
Bromomethane:	ND<50	50			
Vinyl Chloride:	ND<50	50			
Chloroethane:	ND<50	50			
Methylene Chloride:	ND<50	50			
Acetone:	ND<100	100			
Carbon Disulfide:	ND<15	15			
Trichlorofluoromethane:	ND<15	15			
1,1-Dichloroethene:	ND<15	15	84%	59-172	1%
1,1-Dichloroethane:	ND<15	15			
t-1,2-Dichloroethene:	ND<15	15			
Chloroform:	ND<15	15			
1,2-Dichloroethane:	ND<5	5			
2-Butanone:	ND<100	100			
1,1,1-Trichloroethane:	ND<15	15			
Carbon tetrachloride:	ND<15	15			
Vinyl Acetate:	ND<50	50			
Bromodichloromethane:	ND<15	15			
1,2-Dichloropropane:	ND<15	15			
c-1,2-Dichloroethene:	ND<15	15			
c-1,3-Dichloropropene:	ND<15	15			
Trichloroethene:	ND<15	15	90%	62-137	1%
Dibromochloromethane:	ND<15	15			
1,1,2-Trichloroethane:	ND<15	15			
Benzene:	ND<5	5	87%	66-142	2%
t-1,3-Dichloropropene:	ND<15	15			
Bromoform:	ND<15	15			
4-Methyl-2-Pentanone:	ND<50	50			
2-Hexanone:	ND<50	50			

Superior Precision Analytical, Inc.
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EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
Quality Assurance and Control Data - Soil

Laboratory Number 57153
Allwaste Transportation and Remediation
PG&E-Tompock P2-Oil

Compound	Method Blank (ug/kg)	RL (ug/kg)	Average Spike Recovery (%)	Limits (%)	RPD (%)
Tetrachloroethene:	ND<15	15			
1,1,2,2-Tetracl-ethane:	ND<15	15			
Toluene:	ND<15	15	89%	59-139	1%
Chlorobenzene:	ND<15	15	97%	60-133	1%
Ethyl Benzene:	ND<15	15			
Styrene:	ND<15	15			
Xylenes:	ND<15	15			
1,3-Dichlorobenzene:	ND<15	15			
1,4-Dichlorobenzene:	ND<15	15			
1,2-Dichlorobenzene:	ND<15	15			
1,2-Dichloroethane-d4:	98%			70-121	
Toluene-d8:	104%			81-117	
Bromofluorobenzene:	100%			74-121	

Definitions:
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
ug/kg = Parts per billion (ppb)
QC File No. 57153

Amy A Nwogu
Senior Chemist
Account Manager

693 5536.1

C.K.C., Inc.
Environmental Services
PO Box 2327
Paso Robles, CA 93447
(408)627-2595
(408)627-2584 FAX
(805)238-0412

SEND TO:
Twining Laboratories
2527 Fresno St.
Fresno, CA. 93721

RUSH

SAMPLE CHAIN OF CUSTODY

1891

SEND RESULTS TO: CKC, Inc. PO Box 431 San Ardo, CA 93450

CONTACT NAME: Sean McCormick

PROJECT NAME/NUMBER: PG & E / Topock

SAMPLER NAME: Mike Goodwin

SAMPLER SIGNATURE: Mike Goodwin

ANALYSIS REQUIRED

LAB #	SAMPLE IDENTIFICATION (ID#, LOCATION, MATRIX)	DATE/TIME COLLECTED	# OF ITEMS	PRESERVE	TRPH	PCB	Vol. Org.	Semi Vol.						
1	P2-OIL	9-27-93 / 1:52	2	4°	X	X	X	X						
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												

REMARKS

Please Analyze Sample for Total Recoverable Petroleum Hydrocarbons
718.1) PCB (EPA Method 8080) Volitile Organics (EPA Method 8240) &
Semi Volatile Organics (EPA Method 8270)
* Both sample containers to be considered one sample
* Rapid TAT 24HR

SAMPLE RELINQUISHED BY	DATE/TIME	RECEIVED BY
Michael Goodwin	9-28-93 / 8:20	
	/	
	/	
	/	

WHITE - WITH SAMPLE YELLOW - JOB FILE PINK - MASTER FILE

POND 1 LINER MATERIAL (SAMPLES P1 #6, P1 #2, P1 #3, P1 #4)

THE TWINING LABORATORIES, INC.
EST. 1898
ANALYTICAL CHEMISTRY • ENVIRONMENTAL SERVICES
GEOTECHNICAL ENGINEERING • DRILLING SERVICES
CONSTRUCTION INSPECTION & MATERIALS TESTING

REPORT DATE : October 18, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID: 693-5704.1

DATE SAMPLED : 10-05-93 at 1706 by M. Heckathorn
DATE RECEIVED: 10-07-93 at 1000 via UPS

CLIENT : Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT : PG&E- Topock
TL# : 393-0189-01

ANALYZED BY : T. Geringer, K. Furlow
REVIEWED BY : J. Strutzel

DATE PREPARED: 10-08-93 through 10-14-93
DATE ANALYZED: 10-11-93 through 10-15-93 SAMPLE TYPE: Solid

CLIENT SAMPLE ID: Pond 1 #6

CAM METALS- TOTAL	RESULTS (mg/kg)	DLR (mg/kg)	METHOD
Antimony (Sb)	ND	5.0	6010
Arsenic (As)	2.5	0.2	7060
Barium (Ba)	3.6	0.5	6010
Beryllium (Be)	ND	0.1	6010
Cadmium (Cd)	1	1	6010
Chromium (Cr)	ND	1	6010
Cobalt (Co)	ND	5	6010
Copper (Cu)	ND	5	6010
Lead (Pb)	ND	5	7420
Mercury (Hg)	ND	0.1	7471
Molybdenum (Mo)	ND	20	6010
Nickel (Ni)	ND	5	6010
Selenium (Se)	ND	0.3	7740
Silver (Ag)	ND	1	7760
Thallium (Tl)	ND	0.5	7841
Vanadium (V)	ND	5	6010
Zinc (Zn)	ND	5	6010

CALIFORNIA DEPARTMENT OF HEALTH SERVICES CERTIFICATE NO. 1371
mg/kg : milligrams per kilogram (parts per million) wet weight
DLR : Detection Limit for Reporting purposes
Preparation: Method 3050 Acid Digestion
ND: None Detected

mrl

Jon Strutzel
Jon L. Strutzel
Inorganic Supervisor

Debra Lehman
Debra K. Lehman
QA Manager

Rev. 1 8/93 (CAMSOLID.TOT)

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REPORT DATE : October 18, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID: 693-5704.2

DATE SAMPLED : 10-05-93 at 1706 by M. Heckathorn
DATE RECEIVED: 10-07-93 at 1000 via UPS

CLIENT : Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT : PG&E- Topock
TL# : 393-0189-01

ANALYZED BY : T. Geringer, K. Furlow
REVIEWED BY : J. Strutzel

DATE PREPARED: 10-08-93 through 10-14-93
DATE ANALYZED: 10-11-93 through 10-15-93 SAMPLE TYPE: Solid

CLIENT SAMPLE ID: Pond 1 #2

CAM METALS- TOTAL	RESULTS (mg/kg)	DLR (mg/kg)	METHOD
Antimony (Sb)	ND	5.0	6010
Arsenic (As)	2.1	0.2	7060
Barium (Ba)	3.3	0.5	6010
Beryllium (Be)	ND	0.1	6010
Cadmium (Cd)	ND	1	6010
Chromium (Cr)	ND	1	6010
Cobalt (Co)	ND	5	6010
Copper (Cu)	ND	5	6010
Lead (Pb)	ND	5	7420
Mercury (Hg)	ND	0.1	7471
Molybdenum (Mo)	ND	20	6010
Nickel (Ni)	ND	5	6010
Selenium (Se)	0.6	0.3	7740
Silver (Ag)	ND	1	7760
Thallium (Tl)	ND	0.5	7841
Vanadium (V)	ND	5	6010
Zinc (Zn)	ND	5	6010

CALIFORNIA DEPARTMENT OF HEALTH SERVICES CERTIFICATE NO. 1371
mg/kg : milligrams per kilogram (parts per million) wet weight Preparation: Method 3050 Acid Digestion
DLR : Detection Limit for Reporting purposes ND: None Detected

mrl

Jon Strutzel
Jon L. Strutzel
Inorganic Supervisor

Debra Lehman
Debra K. Lehman
QA Manager

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CONSTRUCTION INSPECTION & MATERIALS TESTING

REPORT DATE : October 18, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID: 693-5704.3

DATE SAMPLED : 10-05-93 at 1700 by M. Heckathorn
DATE RECEIVED: 10-07-93 at 1000 via UPS

CLIENT : Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT : PG&E- Topock
TL# : 393-0189-01

ANALYZED BY : T. Geringer, K. Furlow
REVIEWED BY : J. Strutzel

DATE PREPARED: 10-08-93 through 10-14-93
DATE ANALYZED: 10-11-93 through 10-15-93 SAMPLE TYPE: Solid

CLIENT SAMPLE ID: Pond 1 #3

CAM METALS- TOTAL	RESULTS (mg/kg)	DLR (mg/kg)	METHOD
Antimony (Sb)	ND	5.0	6010
Arsenic (As)	2.5	0.2	7060
Barium (Ba)	3.1	0.5	6010
Beryllium (Be)	ND	0.1	6010
Cadmium (Cd)	3	1	6010
Chromium (Cr)	3	1	6010
Cobalt (Co)	ND	5	6010
Copper (Cu)	ND	5	6010
Lead (Pb)	ND	5	7420
Mercury (Hg)	ND	0.1	7471
Molybdenum (Mo)	ND	20	6010
Nickel (Ni)	ND	5	6010
Selenium (Se)	0.6	0.3	7740
Silver (Ag)	ND	1	7760
Thallium (Tl)	ND	0.5	7841
Vanadium (V)	ND	5	6010
Zinc (Zn)	ND	5	6010

CALIFORNIA DEPARTMENT OF HEALTH SERVICES CERTIFICATE NO. 1371
mg/kg : milligrams per kilogram (parts per million) wet weight
DLR : Detection Limit for Reporting purposes
Preparation: Method 3050 Acid Digestion
ND: None Detected

mrl

Jon Strutzel
Jon L. Strutzel
Inorganic Supervisor

Debra Lehman
Debra K. Lehman
QA Manager

Rev. 1 8/93 (CAMSOLID.TOT)

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REPORT DATE : October 18, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID: 693-5704.4

DATE SAMPLED : 10-05-93 at 1700 by M. Heckathorn
DATE RECEIVED: 10-07-93 at 1000 via UPS

CLIENT : Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT : PG&E- Topock
TL# : 393-0189-01

ANALYZED BY : T. Geringer, K. Furlow
REVIEWED BY : J. Strutzel

DATE PREPARED: 10-08-93 through 10-14-93
DATE ANALYZED: 10-11-93 through 10-15-93 SAMPLE TYPE: Solid

CLIENT SAMPLE ID: Pond 1 #4

CAM METALS- TOTAL	RESULTS (mg/kg)	DLR (mg/kg)	METHOD
Antimony (Sb)	ND	5.0	6010
Arsenic (As)	4.0	0.2	7060
Barium (Ba)	16	0.5	6010
Beryllium (Be)	ND	0.1	6010
Cadmium (Cd)	ND	1	6010
Chromium (Cr)	8	1	6010
Cobalt (Co)	ND	5	6010
Copper (Cu)	ND	5	6010
Lead (Pb)	ND	5	7420
Mercury (Hg)	ND	0.1	7471
Molybdenum (Mo)	ND	20	6010
Nickel (Ni)	ND	5	6010
Selenium (Se)	ND	0.3	7740
Silver (Ag)	ND	1	7760
Thallium (Tl)	ND	0.5	7841
Vanadium (V)	ND	5	6010
Zinc (Zn)	6	5	6010

CALIFORNIA DEPARTMENT OF HEALTH SERVICES CERTIFICATE NO. 1371
mg/kg : milligrams per kilogram (parts per million) wet weight
DLR : Detection Limit for Reporting purposes
Preparation: Method 3050 Acid Digestion
ND: None Detected

mrl

Jon Strutzel
Jon L. Strutzel
Inorganic Supervisor

Debra Lehman
Debra K. Lehman
QA Manager

Rev. 1 8/93 (CAMSOLID.TOT)

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REPORT DATE : October 18, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID : 693-5704.1-4

DATE SAMPLED : 10-05-93 at As Listed by M. Heckathorn
DATE RECEIVED : 10-07-93 at 1000 via UPS

CLIENT : Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT : PG&E- Topock
TL# : 393-0189-01

ANALYZED BY : C. Gupton
REVIEWED BY : J. Strutzel

DATE PREPARED : 10-11-93
DATE ANALYZED : 10-11-93 SAMPLE TYPE : Solid

CONSTITUENT : pH

LAB ID#	CLIENT SAMPLE ID	RESULTS	UNITS	DLR	METHOD
.1	Pond 1 #6 @ 1706	8.2	pH	N/A	9045
.2	Pond 1 #2 @ 1706	8.4	pH	N/A	9045
.3	Pond 1 #3 @ 1700	7.9	pH	N/A	9045
.4	Pond 1 #4 @ 1700	7.8	pH	N/A	9045

CALIFORNIA DEPARTMENT OF HEALTH SERVICES CERTIFICATE NO. 1371
DLR: Detection Limit for Reporting purposes

mrl

Jon Strutzel
Jon L. Strutzel
Inorganics Supervisor

Debra Lehman
Debra K. Lehman
QA Manager

Rev. 1 8/93 (FORMI.INO)

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GEOTECHNICAL ENGINEERING • DRILLING SERVICES
CONSTRUCTION INSPECTION & MATERIALS TESTING

REPORT DATE : October 18, 1993 PROJECT MGR: Walt Plachta
LABORATORY ID : 693-5704.1-4

DATE SAMPLED : 10-05-93 at As Listed by M. Heckathorn
DATE RECEIVED : 10-07-93 at 1000 via UPS

CLIENT : Allwaste Transportation and Remediation
P.O. Box 150
San Martin, CA 95046

PROJECT : PG&E- Topock
TL# : 393-0189-01

ANALYZED BY : C. Gupton
REVIEWED BY : J. Strutzel

DATE PREPARED : 10-11-93
DATE ANALYZED : 10-11-93 SAMPLE TYPE : Solid

CONSTITUENT : Specific Conductance (EC)

LAB ID#	CLIENT SAMPLE ID	RESULTS	UNITS	DLR	METHOD
.1	Pond 1 #6 @ 1706	67	uS/cm	1	120.1
.2	Pond 1 #2 @ 1706	86	uS/cm	1	120.1
.3	Pond 1 #3 @ 1700	51	uS/cm	1	120.1
.4	Pond 1 #4 @ 1700	88	uS/cm	1	120.1

CALIFORNIA DEPARTMENT OF HEALTH SERVICES CERTIFICATE NO. 1371
DLR: Detection Limit for Reporting purposes
uS/cm: microSiemens per Centimeter @ 25°C

mrl

Jon Strutzel
Jon L. Strutzel
Inorganics Supervisor

Debra Lehman
Debra K. Lehman
QA Manager

Rev. 1 8/93 (FORM1.INO)

CORPORATE OFFICE:
2527 Fresno Street
Fresno, CA 93721
(209) 268-7021 • Fax 268-7126
Chemistry Fax 268-0740

MODESTO
4230 Kiernan Ave. Suite 105
Modesto, CA 95356
(209) 545-1050
Fax 545-1147

VISALIA
2521 E. Valley Oaks Drive
Visalia, CA 93292
(209) 625-1712
Fax 625-1714

BAKERSFIELD
3701 Pegasus Drive, Suite 124
Bakersfield, CA 93308
(805) 393-5088
Fax 393-4643

CKC, Inc.
Environmental Services
PO Box 2327
Paso Robles, CA 93447
(408)627-2595
(408)627-2584 FAX
(805)238-0412

693-5704.1-4

SEND TO:
Twining Laboratories
2527 Fresno St
Fresno, CA 93721

RUSH

SAMPLE CHAIN OF CUSTODY

1134

Due: 10-1

SEND RESULTS TO: CKC, Inc. PO Box 431 San Ardo, CA 93450

CONTACT NAME	PROJECT NAME/NUMBER
Sean McCormick	PG&E / Topock

SAMPLER NAME	SAMPLER SIGNATURE
Michael Heckathorn	

ANALYSIS REQUIRED

LAB #	SAMPLE IDENTIFICATION (ID#, LOCATION, MATRIX)	DATE/TIME COLLECTED	# OF ITEMS	PRESERVE	CAM 17	pH	EC						
693	5704.1 Pond 1 #6	10-5-93 / 5:06	1		X	X	X						
↓	5704.2 Pond 1 # 2	10-5-93 / 5:06	1		X	X	X						
	5704.3 Pond 1 #3	10-5-93 / 5:00	1		X	X	X						
↓	5704.4 Pond 1 #4	10-5-93 / 5:00	1		X	X	X						
		/											
		/											
		/											
		/											
		/											
		/											

REMARKS

Please analyze Liver Samples for CAM 17 Metals. Please Review bid Spec's (PG&E Topock) for metals requested as discussed

TAT - 1 Week (ASAP)

LOCATION METALS

SAMPLE RELINQUISHED BY	DATE/TIME	RECEIVED BY
Michael Heckathorn	10-5-93 5:20	Michael Goodwin
Michael Goodwin	10-5-93 10/7/93 0:05	[illegible]
	/	
	/	

WHITE - WITH SAMPLE YELLOW - JOB FILE PINK - MASTER FILE

EVAPORATION POND WATER LINE SYSTEM WATER SAMPLE
(SAMPLE PVC PIPE WATER)

THE TWINING LABORATORIES, INC.
EST. 1898
ANALYTICAL CHEMISTRY • ENVIRONMENTAL SERVICES
GEOTECHNICAL ENGINEERING • DRILLING SERVICES
CONSTRUCTION INSPECTION & MATERIALS TESTING

REPORT DATE : October 15, 1993 INVOICE #11489
LABORATORY ID : 693-5703.1 PAGE 1 of 1

DATE SAMPLED : 10-01-93 at 0805 by M. Goodwin
DATE RECEIVED : 10-07-93 at 1000 from M. Goodwin

CLIENT : Allwaste Transportation

PROJECT MANAGER : W. Plachta

ANALYZED BY : K. Furlow
REVIEWED BY : J. Strutzel

DATE PREPARED : 10-12-93
DATE ANALYZED : 10-12-93 SAMPLE TYPE : Water

CONSTITUENT : Total Chromium

LAB ID#	CLIENT SAMPLE ID	RESULTS	UNITS	DLR	METHOD
.1	PVC Pipe Water	ND	mg/L	0.01	200.7

CALIFORNIA DEPARTMENT OF HEALTH SERVICES CERTIFICATE NO. 1371
mg/L : milligrams per Liter (parts per million)
ND: None Detected
DLR: Detection Limit for Reporting purposes

ked

Jon Strutzel
Jon L. Strutzel
Inorganics Supervisor

Debra Lehman
Debra K. Lehman
QA Manager

Rev. 1 8/93 (FORM1.INO)

CORPORATE OFFICE:
2527 Fresno Street
Fresno, CA 93721
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Fax 393-4643

C.K.C., Inc.
Environmental Services
PO Box 2327
Paso Robles, CA 93447
(408)627-2595
(408)627-2584 FAX
(805)238-0412

693-5703.1

SEND TO:
Twining Laboratories
2527 Fresno St
Fresno, CA. 93721

SAMPLE CHAIN OF CUSTODY

1133 Dde:

SEND RESULTS TO: CKC, Inc. PO Box 431 San Ardo, CA 93450

CONTACT NAME: Sean McCormick

PROJECT NAME/NUMBER: PG&E/Topock

SAMPLER NAME: Mike Goodwin

SAMPLER SIGNATURE: Mike Goodwin

ANALYSIS REQUIRED

LAB #	SAMPLE IDENTIFICATION (ID#, LOCATION, MATRIX)	DATE/TIME COLLECTED	# OF ITEMS	PRESERVE	Total Cr.
1	PVC Pipe Water	10-1-93/8:05	1		X
		/			
		/			
		/			
		/			
		/			
		/			
		/			
		/			
		/			

REMARKS

Please analyze Water Sample for Total Chromium
Normal TAT

SAMPLE RELINQUISHED BY	DATE/TIME	RECEIVED BY
Michael Goodwin	10-4-93 10/7/93 10:00	Mark Bartlett TL 10:00
	/	
	/	
	/	

WHITE - WITH SAMPLE YELLOW - JOB FILE PINK - MASTER FILE

APPENDIX IV

RESULTS OF BACKGROUND SOIL SAMPLE ANALYSIS FOR CALCIUM

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-03-364

Received: 10 MAR 89
Reported: 29 MAR 89

Mr. Phil Watson
PG&E, Geosciences Department
77 Beale Street, Room 2674
San Francisco, California 94106

Purchase Order: Y43-0012-87

CC: Wiegand, Yorke

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-364-1	890309-1 (E8903278*1)	09 MAR 89
03-364-2	890309-2 (E8903278*2)	09 MAR 89

PARAMETER	03-364-1	03-364-2
Nitrite (as NO2), mg/kg	<0.01	<0.01
Total Phosphorus (as P), mg/kg	19	19
Cation Exchange Capacity, meq/100g	4.1	3.0
Sulfite, mg/kg	<10	<10
Antimony, mg/kg	<20	<20
Arsenic, mg/kg	2.9	1.7
Beryllium, mg/kg	<0.8	<0.8
Cadmium, mg/kg	<0.2	<0.2
Cobalt, mg/kg	<1	<1
Copper, mg/kg	6.4	6.0
Lead, mg/kg	6.7	7.2
Mercury, mg/kg	<0.4	<0.4
Nickel, mg/kg	3.6	3.2
Selenium, mg/kg	<0.5	<0.5
Silver, mg/kg	<0.8	<0.8
Thallium, mg/kg	<5	<5
Zinc, mg/kg	16	12

RECEIVED
APR 6 '89
GEOSCIENCES DEPARTMENT

S. D. Lessley

Sim D. Lessley, Ph.D., Laboratory Director

LTSP

LSC	WUS	MKM	BDS
FWB	YBT	RLV	BES
JCG	PCW	YW	WHW
SJM	RKW	JAY	

OFFICE FILES

LOG #

ACTION INFO ROUTE

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-03-278

Received: 10 MAR 89
Reported: 27 MAR 89

Mr. Donald T. Yorke
PG&E, Geosciences Department
77 Beale Street, Room 2674
San Francisco, California 94106

Requisition: Y43-0012-87
CC: Wiegand, Watson

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-278-1	890309-1	09 MAR 89
03-278-2	890309-3	09 MAR 89
03-278-3	890309-2	09 MAR 89

PARAMETER	03-278-1	03-278-2	03-278-3
Sample Held, Not Analyzed	---	HELD	---
Calcium, mg/kg	61000	---	40000
Magnesium, mg/kg	4400	---	3800
Potassium, mg/kg	560	---	500
Sodium, mg/kg	1300	---	190
Iron, mg/kg	5800	---	5700
Manganese, mg/kg	54	---	77
Hexavalent Chromium, mg/kg	<5	---	<5
Total Phosphate, mg/kg	58	---	58
Nitrate(as NO3), mg/kg	13	---	<0.4
pH, Units	7.8	---	8.3
Alkalinity			
Carbonate Alk (as CaCO3), mg/kg	<1	---	1.3
Bicarbonate Alk (as CaCO3), mg/kg	33	---	34.4
Hydroxide Alk (as CaCO3), mg/kg	<1	---	<1
Total Alkalinity (as CaCO3), mg/kg	33	---	37
Chloride, mg/kg	1200	---	<1
Sulfate, mg/kg	300	---	380
Total Fluorides, mg/kg	85	---	110
Organic Carbon, mg/kg	670	---	630
Barium, mg/kg	340	---	140
Chromium, mg/kg	4.4	---	4.0
Molybdenum, mg/kg	<25	---	<25
Vanadium, mg/kg	<50	---	<50
Acid Digestion, Date	03.13.89	---	03.13.89

RECEIVED
APR 6 '89
GEOSCIENCES DEPARTMENT

LSC WUS MKM BDS LTSP
FWB YBT RLV BES
JEG PGW YW WHW
SJM RKW JAY

OFFICE FILES

Sim D. Lessley, Ph.D., Laboratory Director

~~ACTION INFO~~

CHAIN OF CUSTODY RECORD

BC Log Number 8903278

Client name: PGE. DER.	Project or PO#:
Address:	Phone #:
City, State, Zip:	Report attention: Don York.
Sampled by: S. Gregory.	

Analyses required

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Hold	ALK Cl FIT	NO3 SO4 Cr(VI) 60	PH. NA PO4	TOC	DIG. NAO	Ca Mg K Na Ba Cr Fe MN	Hazardous sample Special handling required	Remarks
1	3/9/89		50	① Topock Compressor stn. West end of Pond 3 - 1'	1	X	✓	✓	✓	✓	✓	✓		↳ Mo V
2	3/9/89		50	West end of Pond 3 - 1.5'	1	X	HOLD							Fe2+
3	3/9/89		50	South side of Pond 4 - 2'	1	X	✓	✓	✓	✓	✓	✓		

New Sample ID:

① 890309-1

② 890309-3

③ 890309-2

analyses per P. Watson 3/10 [illegible]

	Signature	Print Name	Company	Date	Time
Relinquished by	Steve Gregory.	Steve Gregory	B+C	3/10/89	0952
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory	[illegible]	MNS	BC LAB	3/10/89	9:52

...LDWELL LABORATORIES

Note:
Samples are discarded 30 days after results are reported unless other arrangements are made.

APPENDIX V

PHOTOGRAPHIC LOG

Section 1 includes photos documenting pond closure activities.

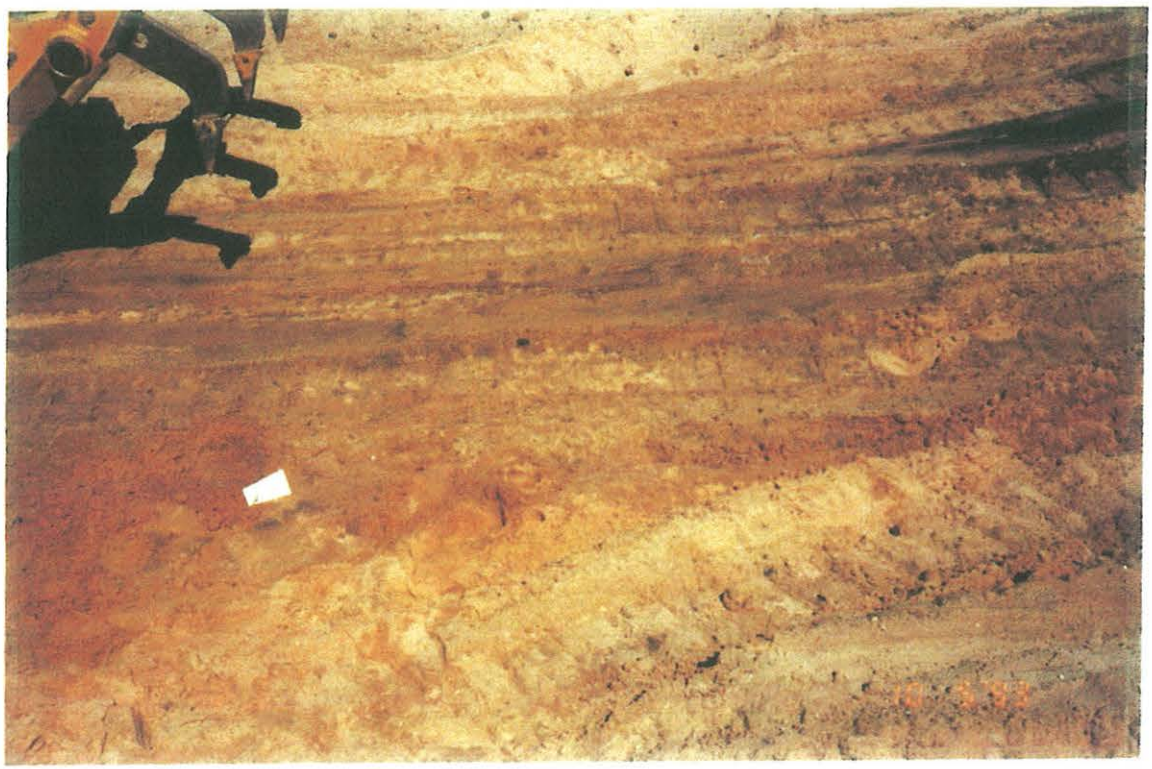
Section 2 provides photos of the wet spots encountered during the subliner soil examination.

(Note: To reduce confusion with the boring designations, the original wet spot numbering system shown on the identification cards in the photos was changed from a two-number designation i.e. 1-1 or 1-2 to a number/alphabetical letter system, i.e. 1-A or 1-B.)

WET SPOT 1-A / BORING P1-2

WET SPOT 1-B / BORING P1-7

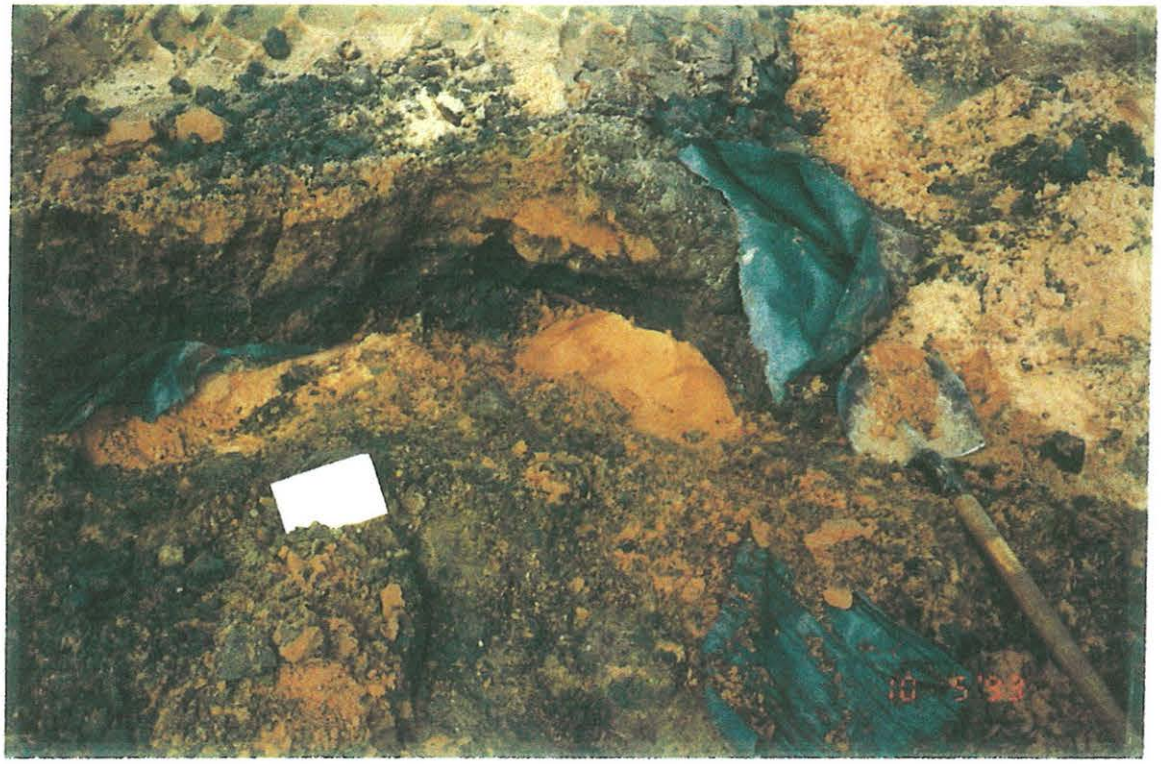
WET SPOT 2-A / BORING P2-5



WET SPOT 2-B / BORING P2-6

WET SPOT 2-C / BORING P2-2

WET SPOT 2-D / BORING P2-2



WET SPOT 3A / BORING P3-6

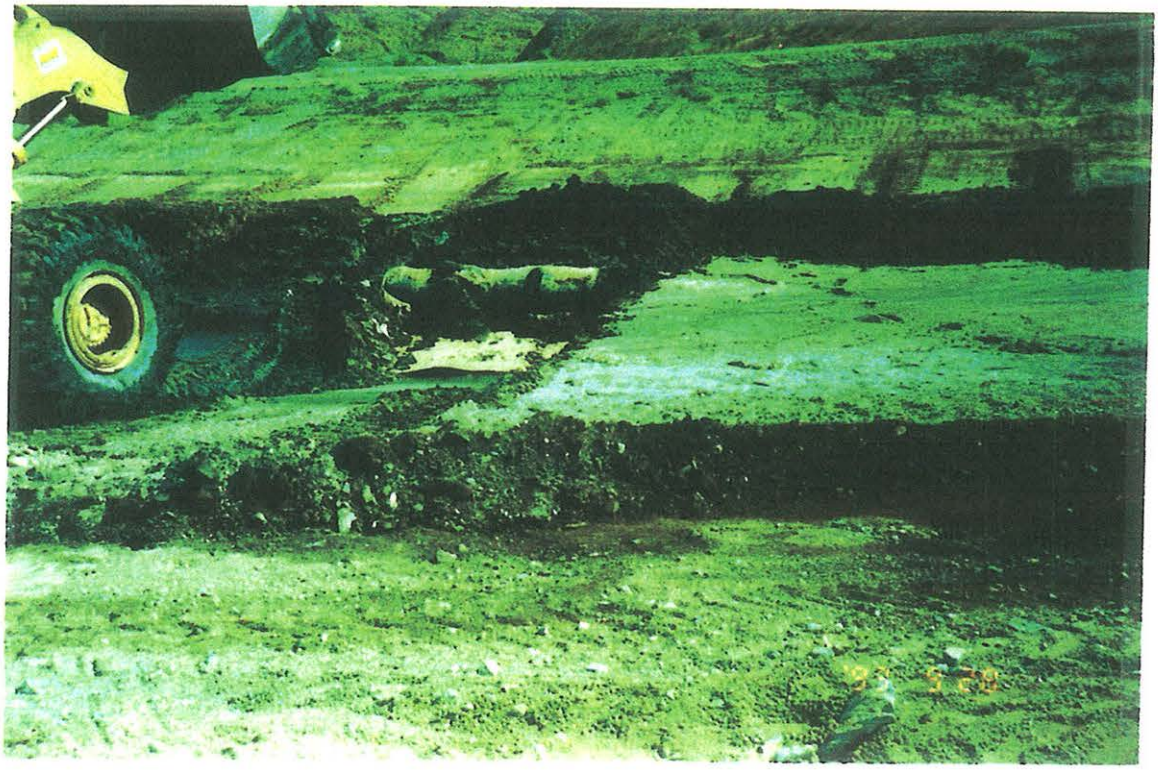
WET SPOT 4A / BORING P4-1

WET SPOT 4B / BORING P4-7

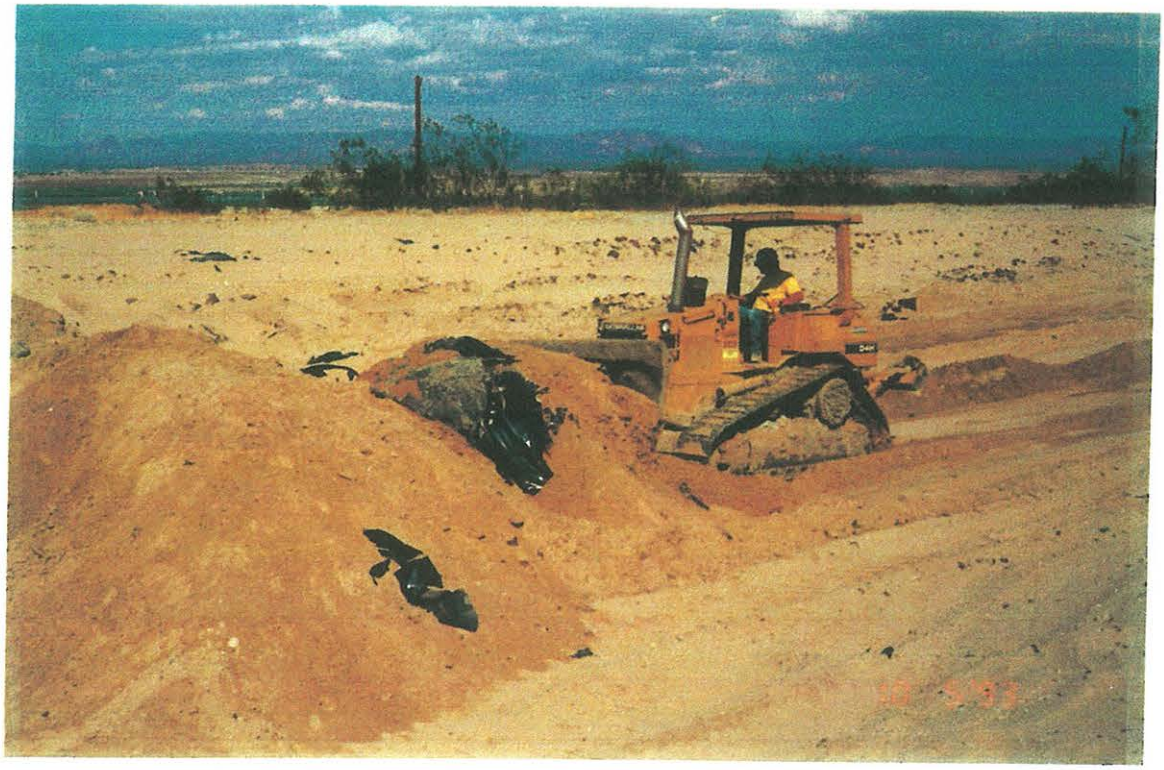
BREAKING UP SALT CRUST TO ENHANCE POND WATER EVAPORATION

SLUDGE EXCAVATION

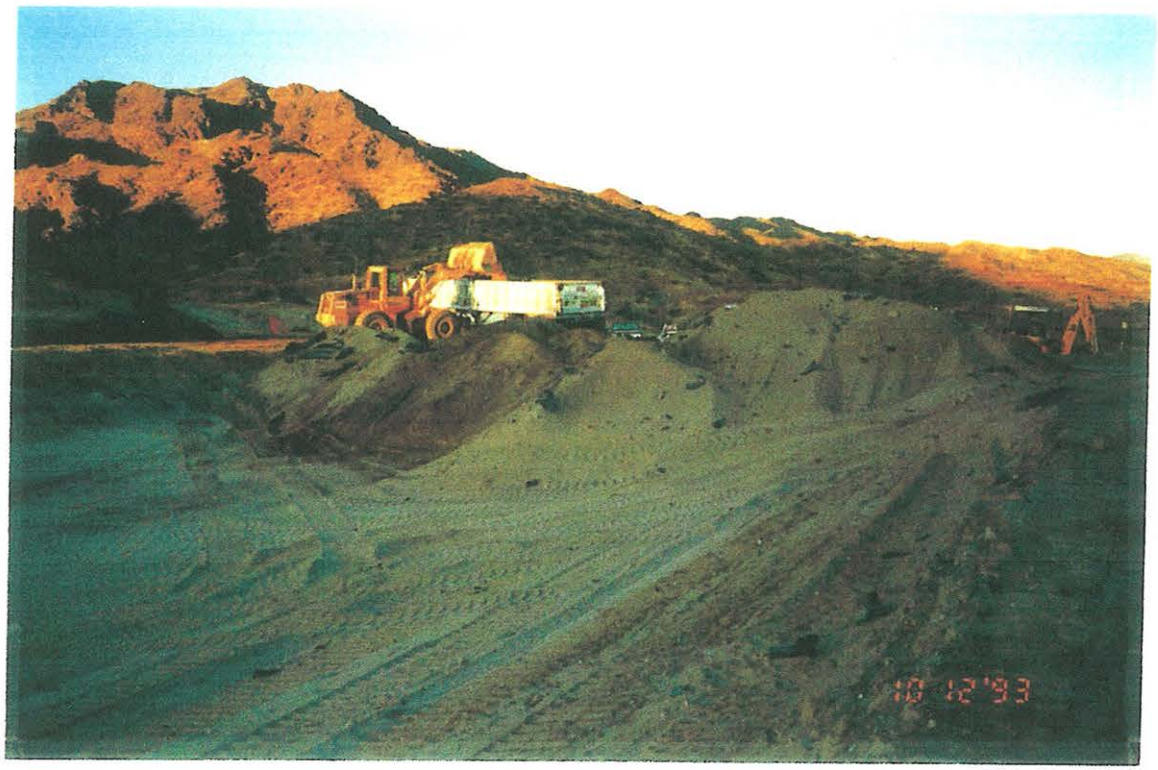
POND 1 LINER COVER SAND EXCAVATION



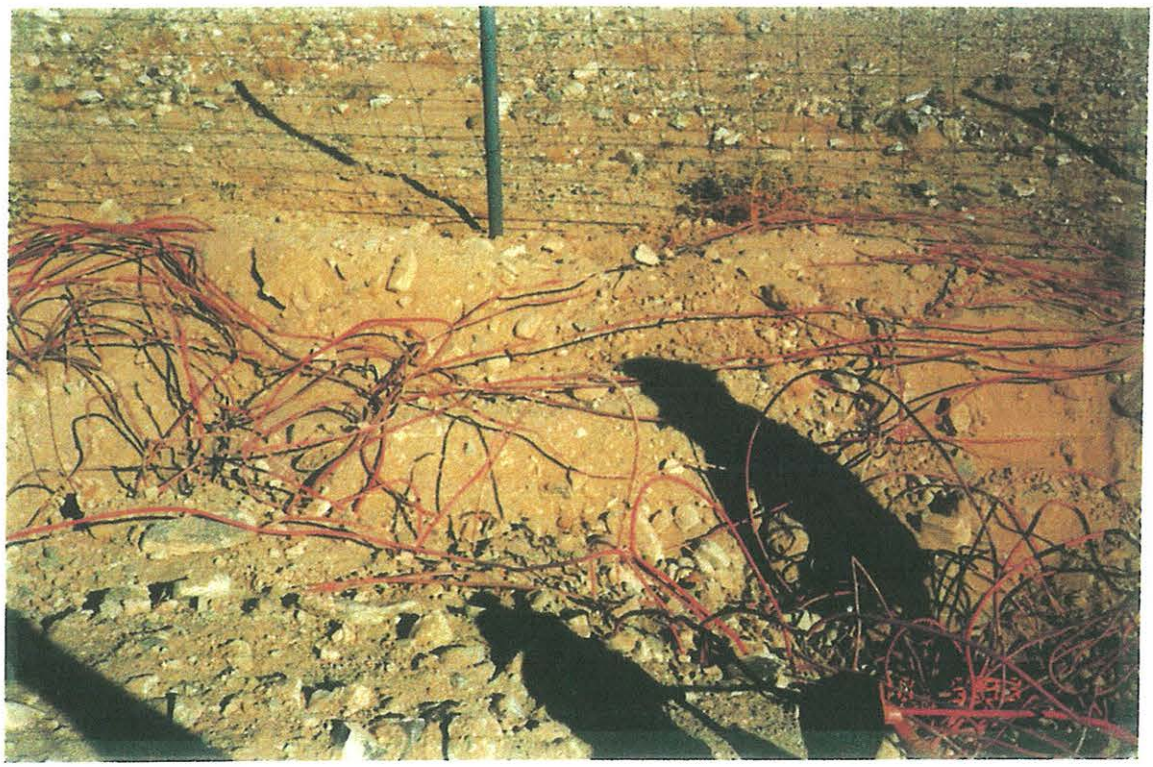
ACCIDENTAL LINER RIP- SHOWING SUBLINER SAND



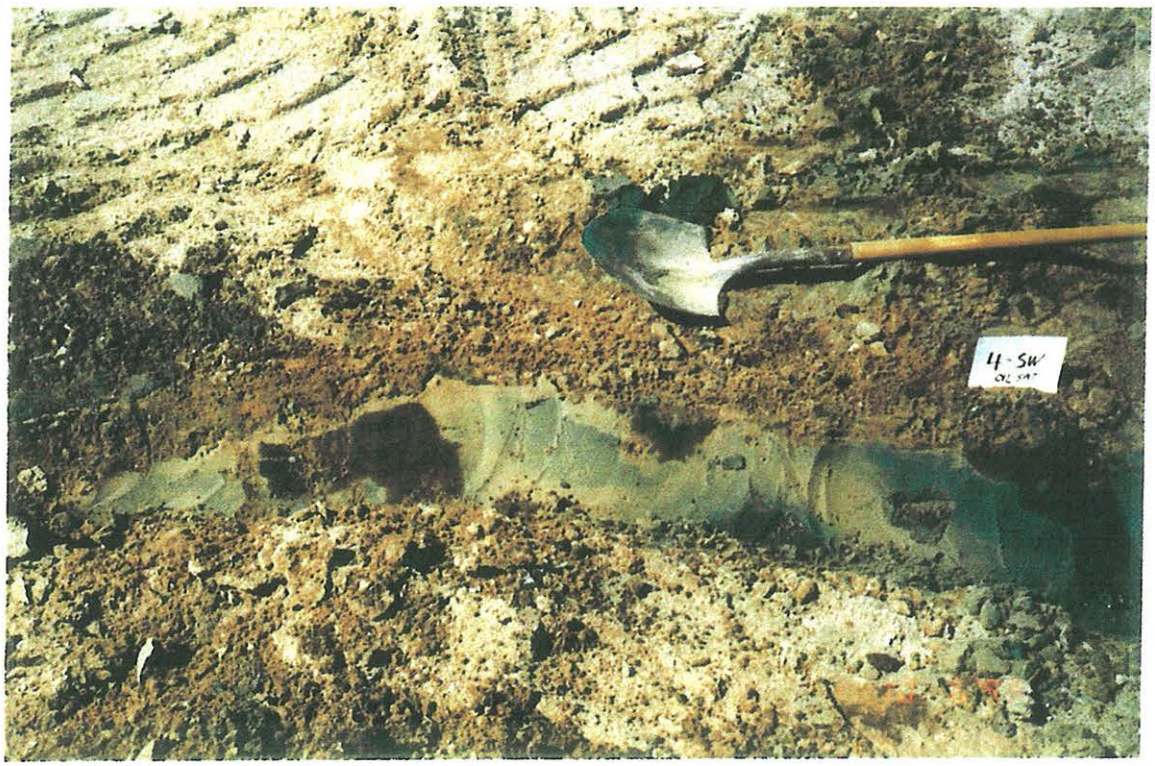
LINER COVER SAND EXCAVATION



DRILLING OF BORING P2-1 BY TWININGS LABORATORY RIG



EXCAVATED RESISTIVITY GRID WIRE



OIL SEEPAGE INTO LINER COVER SAND FROM
ASPHALT SIDE SLOPE PROTECTIVE LAYER

Attachment 1

SAMPLING AND ANALYSIS
FOR CLOSURE OF
WASTE MANAGEMENT FACILITIES
TOPOCK COMPRESSOR STATION

PACIFIC GAS AND ELECTRIC COMPANY

CONTENTS

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APPENDIX A. QUALITY ASSURANCE PLAN

APPENDIX B. SAFETY PROGRAM

APPENDIX C. LABORATORY ANALYTICAL REPORTS

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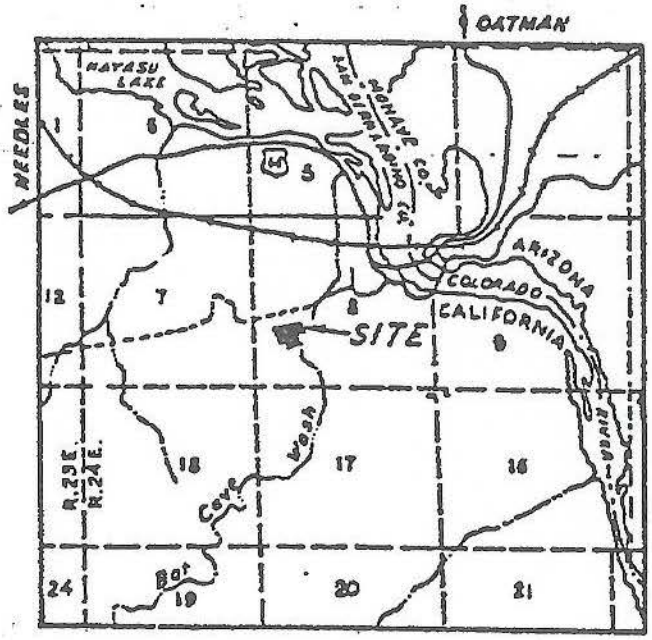
CHAPTER 1

PROJECT BACKGROUND AND OBJECTIVES

Pacific Gas and Electric Company (PGandE) operates the Topock Compressor Station, 15 miles southeast of Needles, California (Figure 1-1). Two cooling towers provide for cooling of natural gas which is compressed at the station and for cooling of lubricating oil used in the compressor engines. To prevent corrosion of the heat exchanger bundles and the cooling towers, a phosphate-based corrosion inhibitor is added to the cooling tower water. This method of corrosion prevention uses nonhazardous chemicals and generates nonhazardous wastes. The previous method of corrosion prevention used hexavalent chromium in the cooling tower water. The addition of hexavalent chromium (CrVI) generated hazardous wastes during treatment of the cooling tower blowdown (discharge) water. Because of the changeover to a nonhazardous corrosion inhibitor, PGandE is proposing to close the hazardous waste treatment, storage, and disposal facilities at the Topock compressor station.

The hazardous waste treatment system received cooling tower blowdown water and treated it to remove the hexavalent chromium prior to disposal. The resulting water was disposed of in a series of four lined evaporation ponds. Associated sludge from the wastewater treatment system was formerly dried in two concrete drying beds prior to off-site disposal. This practice was discontined in mid-1985 and the sludge was transported directly via a registered hazardous waste hauler to an approved disposal facility after being removed from the treatment facility. Shipments were accompanied by a Uniform Hazardous Waste Manifest.

PG50027604



SCALE: 1" = 1 MILE

Figure 1-1 Vicinity Map

Objectives

This report describes the results of sampling and analysis of wastes to characterize the concentrations of inorganic hazardous materials associated with the previous operating method of the cooling towers and wastewater treatment, storage, and disposal facilities at the Topock Compressor Station. Information contained in this report will be used by PGandE to determine the methods used for closure of the existing hazardous waste management facilities at the station. Figures 1-2 and 1-3 detail the hazardous waste facilities at the station. The objectives of the sampling and analysis are as follows:

1. To characterize the cooling tower blowdown water; water at points in the wastewater stream; and evaporation pond water. The parameters analyzed include pH, oil and grease, total dissolved solids (TDS), and inorganic persistent and bioaccumulative toxic substances as defined by California Administrative Code (CAC), Title 22, Article 11, Section 66699(b), with the exception of asbestos. The Section 66699(b) parameters analyzed include antimony, arsenic, barium, beryllium, cadmium, trivalent and hexavalent chromium, cobalt copper, fluoride, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc.

2. To identify the concentration of the above Section 66699(b) parameters and pH in sediments, sludges, and concrete of the sludge drying beds, in the wastewater stream, and in the evaporation ponds.

The remainder of this report includes the following:

1. Identification of the field procedures for obtaining representative water, sludge, concrete, and sediment samples.

PG50027606

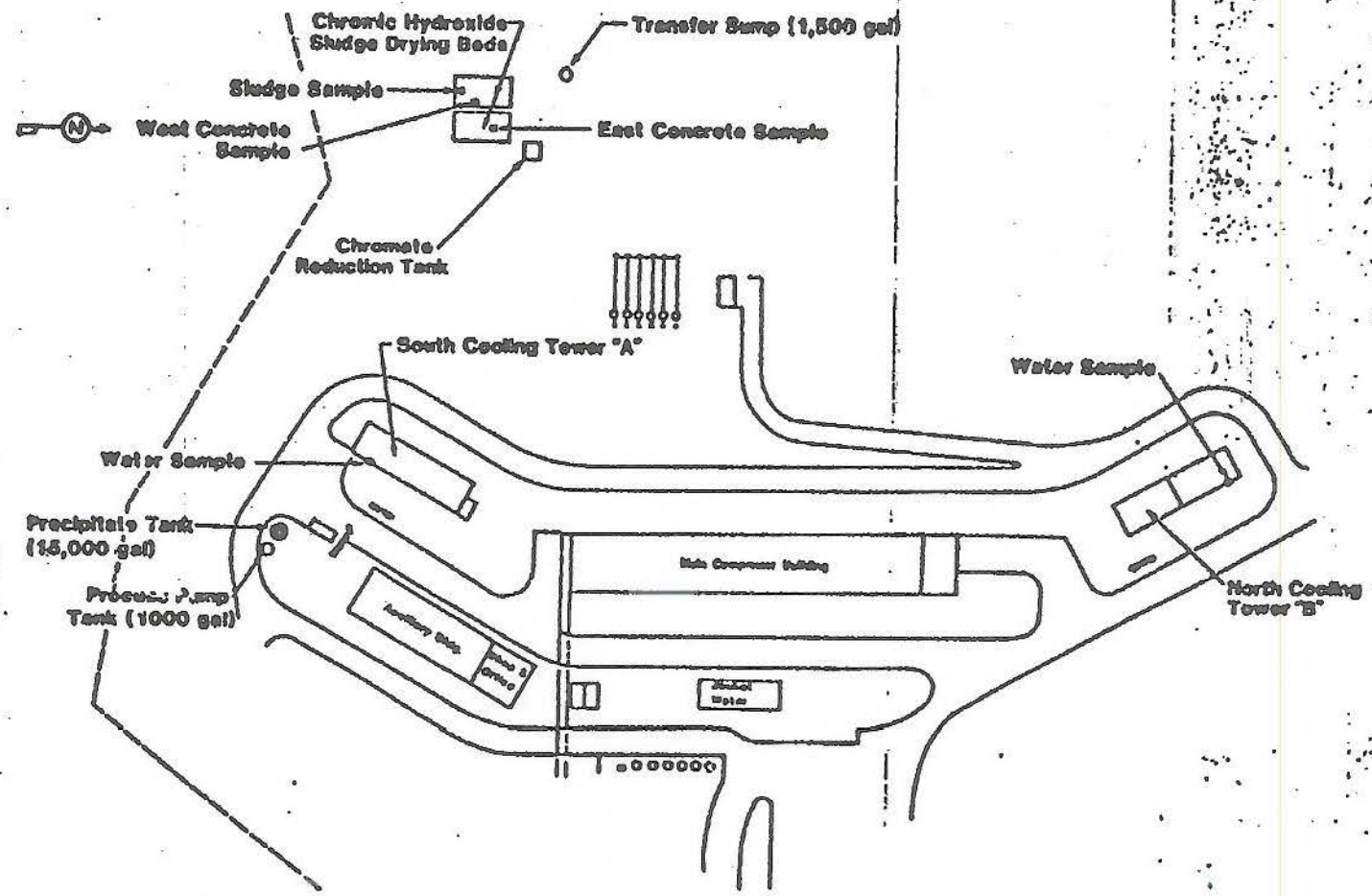
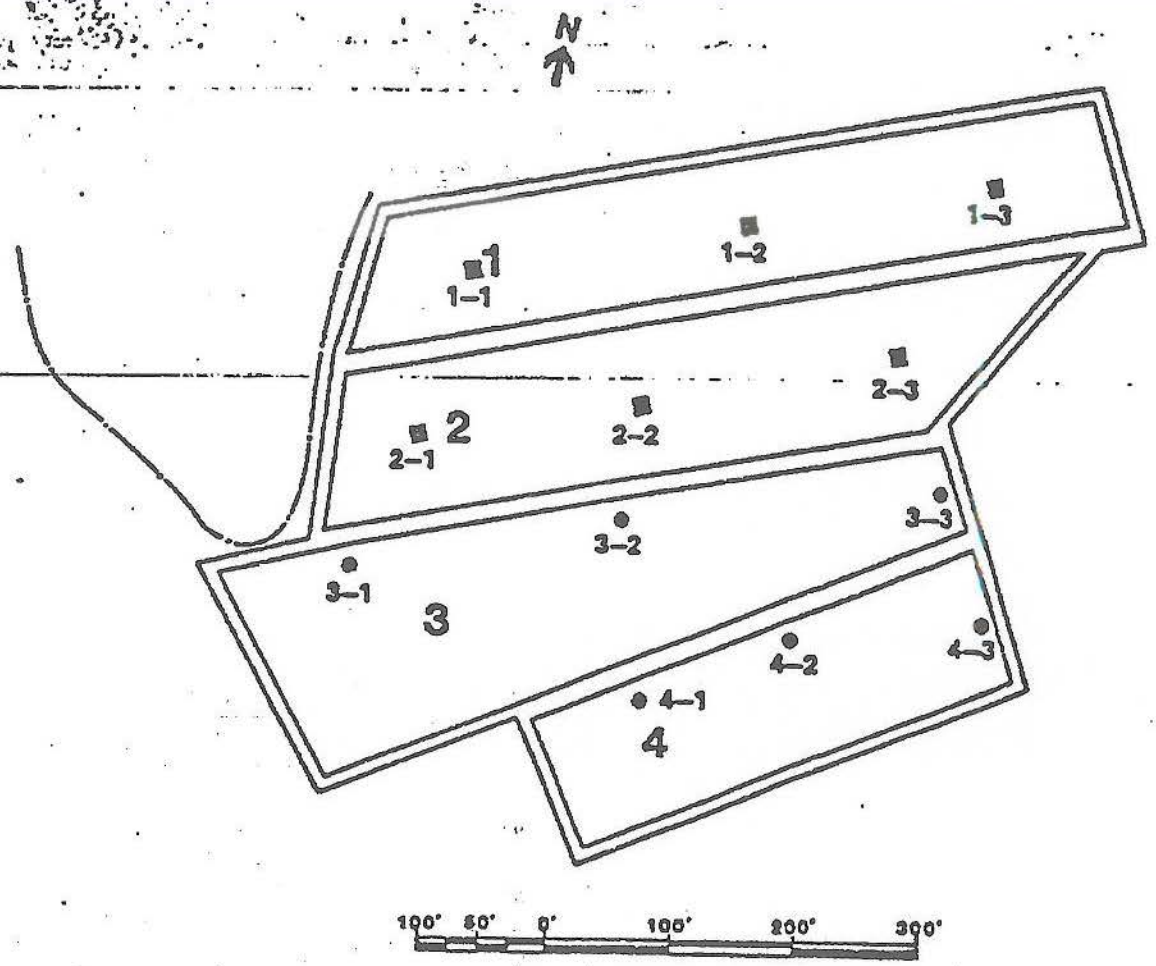


Figure 1-2 Topock Gas Compressor Station

BROWN AND CALDWELL CONSULTING ENGINEERS

PG50027607



LEGEND :

■ APPROXIMATE SOIL SAMPLE LOCATION

● APPROXIMATE SOIL AND WATER SAMPLE LOCATION

Figure 1-3 Topock Gas Compressor Station Evaporation Ponds

2. Identification of the wastewater treatment units to be sampled and descriptions of the approximate locations of the samples.

3. Establishment of analytical protocol for all samples.

4. Results of water, sludge and sediment sampling.

The work described in this report is based on Brown and Caldwell's "Sampling and Analysis Plan for Closure of Waste Management Facilities, Topock Compressor Station, Pacific Gas and Electric Company," dated September 12, 1985. The plan describes the methods for sampling and analysis of wastes from components of the wastewater treatment, storage, and disposal facilities at the station, at the time of closure. The sampling described in this report was conducted on August 8, 1985, when the hexavalent chromium corrosion inhibitor was being used. Additional sampling will be conducted in the future to complete the characterization of wastes, of the facilities to be closed, and of the native materials beneath the facilities.

The above referenced work plan also details the methods used for chain-of-custody control, laboratory quality assurance methods, and the site safety plan. These items from the work plan are included in Appendices A and B of this report. The field chain-of-custody cards are maintained at Brown and Caldwell's offices. The laboratory analytical reports from this sampling are contained in Appendix C of this report.

PG50027609

CHAPTER 2

SAMPLING METHODS

Cooling tower blowdown water was treated through a system designed to remove hexavalent chromium (CrVI) from the blowdown water prior to disposal of the water in the evaporation ponds. The treatment process consisted of the following:

1. Blowdown water from the two cooling towers was combined into one waste stream. The water was treated with sulfur dioxide in the chromate reduction tank to reduce CrVI to trivalent chromium (CrIII).

2. The water was piped from the chromate reduction tank to the 1,500-gallon transfer sump. From the transfer sump, the water was pumped to the 15,000-gallon precipitate tank, where liquid sodium hydroxide was added to precipitate chromium hydroxide. Sludge from this process was formerly piped to sludge drying beds for dehydration prior to disposal. At the time of the changeover to the phosphate-based system, the fluid sludge was held in the bottom of the precipitate tank until removal for off-site disposal.

3. The water from the precipitate tank then entered the 1000-gallon process pump tank. From the process pump tank, the water was pumped approximately 1/4 mile to the four lined evaporation ponds.

Sampling Locations

Samples of liquids, sludges, and/or solids were obtained from the cooling towers and components of the wastewater treatment system described above. These samples were obtained to characterize the

PG50027610

concentrations of parameters listed in Chapter 1 and to determine if hazardous concentrations of the Section 66699(b) parameters are present. Specific units which were sampled and the type of samples obtained are described below. Figures 1-2 and 1-3 show the general sample locations.

Cooling Towers. A sample of cooling tower blowdown water was obtained from the base of each operating cooling tower. A CrVI analysis was performed on water from each cooling tower. The waters were composited in the laboratory for the complete analysis.

Chromate Reduction Tank. A liquid sample was obtained from the tank.

Transfer Sump. A liquid and a sludge sample were obtained from the transfer sump.

Precipitate Tank. A sludge sample was obtained from the precipitate tank.

Sludge Drying Beds. These concrete structures were formerly used for drying precipitate tank sludge prior to its disposal. One concrete sample was obtained from a wall in the center of the east drying bed. A second concrete sample was obtained from the east wall of the west drying bed. Sludge was not present in the east drying bed. A sludge sample was obtained from a pile of dried sludge in the west drying bed.

Process Pump Tank. A liquid sample of the process pump tank water was obtained from the top of the precipitate tank.

Evaporation Ponds. Three liquid subsamples were obtained from Pond 3 and Pond 4. The subsamples were composited in the laboratory for analysis of one sample from each pond. Pond bottom sludge was obtained from three sites in each pond. The east-west oriented rectangular ponds are approximately 40 feet wide and 300 feet long.

Sample sites for each liquid subsample and sludge sample were in the west, center, and east third of each pond. The bottom sludge samples were not composited. The approximate sample locations are shown on Figure 1-3.

Field Procedures

Liquid, sludge, and concrete samples were obtained during the field investigation to identify the concentrations of the constituents listed in Chapter 1 at various points in the cooling tower blowdown treatment stream and in the evaporation ponds. The equipment and methods that were used to obtain samples are described below. All samples were stored on ice in closed chests and were delivered by Brown and Caldwell personnel to Brown and Caldwell's Pasadena laboratory on the day of collection. Table 2-1 details the sample locations and types of samples which were obtained during the field investigation.

Liquid Samples. Liquid samples were obtained by grab sampling techniques from tanks and ponds. Samples from the evaporation ponds, the cooling towers, the chromate reduction tank, and the process pump tank were obtained by grab techniques and retained directly into sample bottles. Transfer sump samples were obtained by using fresh polypropylene and silicone tubing attached to a peristaltic pump. The tubing inlet was lowered to a depth half-way between the tank bottom and the liquid surface. Water was pumped through the tubing and discharged directly into the sample bottles. Liquid samples were collected in 500-milliliter plastic bottles and 16-ounce glass jars at each site. One bottle was acidified with nitric acid and was used for analysis of metals except CrVI. Two bottles were unpreserved for CrVI pH, fluoride, and total dissolved solids (TDS) analysis. Water samples for oil and grease analysis were retained in Teflon-capped glass jars.

PG50027612

Sludge and Sediment Samples. The technique used to obtain sludge samples depended on the nature of the material present at the bottom of the tanks or ponds. Sludge samples from the evaporation ponds were obtained by pushing 2-inch-diameter by 6-inch-long brass and fiberglass tubes retained by an AMS core sampler into the sludge. The bottom of the core sampler was blunted to prevent puncturing of pond liners. Following removal from the sludge, the end of the tubes were covered with aluminum foil and capped with plastic.

Tubing attached to a peristaltic pump was used to obtain the sample from the transfer sump. The sludge layer in this tank was estimated to be less than 1/2-inch thick, therefore, only a small quantity of sludge was obtained. -Because of the small sample volume, it could only be analyzed for CrIII and CrVI. The precipitate tank sludge sample was obtained by opening a valve in the bottom of the tank and filling a bucket with liquid and sludge. A glass jar was used to retain the sludge sample after the sludge had settled in the bucket.

The drying bed sludge sample was obtained using a trowel. Samples collected using the latter methods were retained in Teflon-capped glass jars. No sludge was present in the chromate reduction tank.

Concrete Samples. Samples of the concrete walls of the sludge drying beds were obtained by hammering fragments from the concrete. Approximately 500 grams of concrete were obtained at each sampling site. The samples were retained in polyethylene bags.

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CHAPTER 3

ANALYTICAL RESULTS

The laboratory analyses served to characterize the liquid, sludge, and concrete in the cooling tower wastewater management facilities. Concrete from the sludge drying beds was analyzed to determine if adsorption of heavy metals had occurred.

Liquid Samples

Liquid samples were analyzed for inorganic persistent and bioaccumulative toxic substances as defined by the California Administrative Code (CAC), Title 22, Article 11, Section 66699(b), with the exception of asbestos. Based on the nature of operations at the Topock Compressor Station, there was no reason to expect the presence of asbestos. The Section 66699(b) parameters analyzed included antimony, arsenic, barium, beryllium, cadmium, trivalent and hexavalent chromium, cobalt, copper, fluoride, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. Additionally, the total dissolved solids (TDS) concentrations, pH, and oil and grease concentrations of the liquids were determined. Analytical methods used are listed in Table 3-1. Liquid samples to be analyzed for hexavalent chromium were hand carried to Brown and Caldwell's Pasadena laboratory to ensure that the 24-hour holding time for the analysis was not exceeded. Results of liquid sample analyses are presented in Table 3-2. Total recoverable metal concentrations were determined.

To identify if hazardous concentrations of the above Section 66699(b) parameters were present in the liquid samples, the analyses were compared with their respective total threshold limit concentrations (TTLC). The TTLC of a constituent, given in Section 66699(b), defines the total recoverable concentration at

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Table 3-1 Analytical Methods

Constituent	Analytical method: Liquid samples[a]	Analytical method: Solid samples[b]	Total threshold limit concentration, mg/kg[c]	Soluble threshold limit concentration, mg/l[c]
Antimony	204.1	7040	500	15
Arsenic	206.2	7060	500	5.0
Barium	208.1	7080	10000	100
Beryllium	210.1	7090	75	0.75
Cadmium	213.2	7131	100	1.0
Chromium, trivalent	218.1	7190	2500	560
Chromium, hexavalent[d]	218.4	7196	500	5
Cobalt	219.1	3050/219.1	8000	80
Copper	220.1	7210	2500	25
Fluoride	340.2	340.2[e]	18000	180
Lead	239.1	7421	1000	5.0
Mercury	245.1	7470	20	0.2
Molybdenum	246.1	3050/246.1	3500	350
Nickel	249.1	7520	2000	20
Selenium	270.2	7740	100	1.0
Silver	272.1	7760	500	5
Thallium	279.1	7840	700	7.0
Vanadium	286.1	7910	2400	24
Zinc	239.1	7950	5000	250
pH	150.1	9040	-	-
Total dissolved solids	160.1	-	-	-
Oil and grease	413.1	3550/413.2	-	-

[a]Reference: Federal Register, Volume 49, No. 209, p. 43234-43442 (October 26, 1984) and Federal Register, Volume 50, No. 3, p. 690-697 (January 4, 1985).

[b]Reference: Test Methods for Evaluating Solid Waste, Second Edition, U.S. Environmental Protection Agency Publication SW-846, July 1982, and the above.

[c]Reference: CAC Title 22, Article 11, Sec. 66699, October 13, 1984.

[d]Sample preparation by alkaline digestion, EPA Method 3060.

[e]1:10 extract.

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Table 3-2 Liquid Samples

Parameter	Total threshold limit concentration mg/kg	Cooling tower composite	Chromate reduction tank	Transfer sump	Process pump tank	Pond 3	Pond 4
Antimony	500	<0.024	<0.026	<0.024	<0.024	<0.022	<0.022
Arsenic	500	0.060	0.045	0.048	0.052	0.048	<0.023
Barium	10,000	<0.80	2.3	2.3	2.1	2.3	1.4
Beryllium	75	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Cadmium	100	<0.008	<0.008	<0.008	<0.008	<0.008	0.008
Chromium, trivalent	2,500	0.99	7.2	7.0	2.9	1.6	0.49
Chromium, hexavalent	500	0.60	<0.1	2.3	1.7	0.75	<0.1
Cobalt	8,000	<0.07	<0.07	<0.07	<0.7	<1.7	<0.07
Copper	2,500	0.05	0.58	0.07	0.05	0.07	0.10
Fluoride	18,000	28	2.5	25	20	28	53
Lead	1,000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Mercury	20	0.002	<0.001	<0.001	<0.001	<0.001	<0.006
Molybdenum	3,500	<1.0	<1.0	<0.91	<1.0	<1.0	<1.0
Nickel	2,000	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Selenium	100	<0.011	<0.011	<0.011	<0.011	<0.022	0.16
Silver	500	<0.02	<0.02	<0.02	<0.02	0.03	0.05
Thallium	700	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
Vanadium	2,400	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3
Zinc	5,000	1.4	1.3	1.3	0.91	0.34	0.04
pH, units	-	6.1	3.6	3.8	7.5	7.7	8.3
Total dissolved solids	-	6,500	6,100	6,000	6,600	22,000	33,000
Oil and grease	-	<8	8	<8	<8	<8	<8

Note: All analyses in milligrams per liter, except pH.

Cooling Tower A hexavalent chromium: 0.11 mg/l
Cooling Tower B hexavalent chromium: 0.68 mg/l

BROWN AND CALDWELL CONSULTING ENGINEERS

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which a substance may be classified as hazardous. Similarly, the soluble threshold limit concentration (STLC) determines the dissolved concentration at which a substance may be classified as hazardous. In the case of the liquid samples, no analyzed constituent exceeded its TTLC or STLC, and should not be considered as hazardous.

Sludge and Concrete Samples

The sludge and concrete samples were analyzed for pH and to identify the total concentrations of Section 66699(b) parameters. Laboratory sample preparation included grinding and sieving the samples so that all particles were less than 1 millimeter in diameter and sample compositing was as specified in Table 2-1. Samples were analyzed using methods specified in Table 3-1 and total recoverable concentrations are reported in milligrams per kilogram (mg/kg). Results of laboratory analyses of the tank sludge and concrete samples are given in Table 3-3. Pond sludge analyses are given in Table 3-4. A limited quantity of the transfer sump sludge was obtained, therefore, the sample was analyzed for trivalent and hexavalent chromium.

Sludge and concrete analyses were also compared with TTLC values to determine if hazardous concentrations of the Section 66699(b) parameters were present. With the exception of the sample of drying bed sludge, the samples did not contain constituents which were above TTLC levels. The drying bed sludge had trivalent and hexavalent chromium above their TTLC levels. Additionally, analyses were compared with their (STLC). In general, if a solid sample has a constituent with a concentration greater than ten times its STLC, a waste extraction test must be performed to determine if the material may be classified as hazardous. No total recoverable concentrations of metals in the samples from the evaporation ponds, transfer sump, and precipitate tank or the drying bed concrete exceeded ten times the STLC, therefore waste extraction tests (WET) were not performed on any samples. A WET was not performed on the drying bed sludge

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Table 3-3 Solid Samples

Parameter	Total threshold limit concentration, mg/kg	Soluble threshold limit concentration, mg/l	Transfer sump sludge	Precipitate tank sludge	Drying bed sludge	Drying bed concrete East	Drying bed concrete West
Antimony	500	15	-	<0.61	<0.72	<0.72	<0.72
Arsenic	500	5.0	-	3.1	12	3.3	1.2
Barium	10,000	100	-	170	340	230	150
Beryllium	75	0.75	-	<0.83	<0.83	<0.83	<0.83
Cadmium	100	1.0	-	<0.28	0.32	<0.28	<0.28
Chromium, trivalent	2,500	540	810	2,000	3,500	500	470
Chromium, hexavalent	500	5	<1.0	<1.0	590	<1.0	<1.0
Cobalt	8,000	80	-	<1.8	4.8	5.6	2.4
Copper	2,500	25	-	28	130	32	29
Fluoride	18,000	180	-	550	14	1.8	1.2
Lead	1,000	5.0	-	8.7	470	14	12
Mercury	20	0.2	-	<0.50	<0.50	<0.50	<0.50
Molybdenum	3,500	350	-	<51	<51	<51	<51
Nickel	2,000	20	-	2.6	10	9.8	8.7
Selenium	100	1.0	-	<0.36	<0.36	<0.36	<0.36
Silver	500	5	-	0.51	0.72	1.4	1.4
Thallium	700	7.0	-	<5.0	<5.0	<5.0	<5.0
Vanadium	2,400	24	-	<64	<64	<64	<64
Zinc	5,000	250	-	290	2900	330	190
pH, units	-	-	-	8.2	8.3	10	11
Oil and grease	-	-	-	1400	-	-	-

Notes: Double underline denotes hazardous concentration.
Single underline denotes concentration at least 10 times greater than STLC.
All analyses in milligrams per kilogram, except pH.

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PG50027618

Table 3-4 Evaporating Pond Sludge

Parameter	Total threshold limit concentration, mg/kg	Soluble threshold limit concentration, mg/l	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	4-1	4-2	4-3
Antimony	500	15	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Arsenic	500	5.0	3.1	2.3	3.2	2.3	3.6	2.0	2.3	3.0	3.6	1.7	1.3	2.7
Barium	10,000	100	86	79	62	64	62	61	140	190	140	260	150	110
Beryllium	75	0.75	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03
Cadmium	100	1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium, trivalent	2,500	500	270	1000	900	640	500	1300	350	430	530	10	26	390
Chromium, hexavalent	500	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.2	5.0	<1.0	<1.0	<1.0	3.2
Cobalt	8,000	80	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	2.0	2.7	3.0	3.0	3.7	2.6
Copper	2,500	25	17	30	31	21	10	27	12	13	16	6.7	5.2	9.0
Fluoride	10,000	100	5.2	8.0	10	26	28	24	16	10	10	11	7.6	13
Lead	1,000	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Mercury	20	0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Molybdenum	3,500	350	<51	<51	<51	<51	<51	<51	<51	<51	<51	<51	<51	<51
Nickel	2,000	20	2.3	2.5	2.2	1.9	1.9	2.0	5.3	4.9	5.7	5.1	4.9	5.3
Selenium	100	1.0	<0.36	<0.39	<0.36	<0.32	<0.32	<0.32	<0.32	<0.36	<0.36	<0.36	<0.32	<0.36
Silver	500	5	0.72	0.90	0.72	0.90	0.90	1.2	0.86	0.83	0.58	0.55	0.64	0.54
Thallium	700	7.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vanadium	2,400	24	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64
Zinc	5,000	350	310	540	390	550	450	470	480	530	500	35	31	440
pH, units	-	-	8.9	8.1	8.3	8.1	7.9	7.2	8.0	8.3	8.0	9.3	9.2	8.2

Note: All analyses in milligrams per kilogram, except pH.

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sample because the concentrations of trivalent and hexavalent chromium exceed the total threshold limit concentrations for these constituents.

Discussion

Based on the sampling and analysis of components of the wastewater stream, hazardous concentrations of inorganic and persistent bioaccumulative materials are generally not present in the cooling tower blowdown water treatment system at the compressor station. The only material identified as having hazardous concentrations of metals was the residual drying bed sludge. This material was previously determined to be hazardous by PGandE, therefore, no change in the disposal method of this residual sludge is necessary.

This report has presented the results of sampling and analysis of some of the units to be closed at the Topock Compressor Station. The methods to be used for closure of the units will be determined by PGandE. Additional sampling of some of these facilities and the native materials beneath selected facilities will occur during closure.

PG50027620

APPENDIX A

QUALITY ASSURANCE PLAN

APPENDIX A

QUALITY ASSURANCE PLAN

The procedures to be followed in sample collection, identification, and handling at the Pacific Gas and Electric Company (PGandE) Topock site are described below. The analytical quality assurance program is also discussed.

Sample Collection and Handling

Proper collection and handling are essential in ensuring the quality of the sample. All samples will be collected by experienced field personnel. The samples will be collected in suitable containers which have been precleaned at the laboratory and preserved in the field[a] (see Table 3-1). The containers will be clearly marked and dated for identification. All samples will be preserved correctly and stored for analysis no longer than the maximum allowable holding time.

Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures ensure sample integrity and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis will have a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, will be recorded on the boring log or in the field records.

A chain-of-custody card (Figure A-1) will be used to record posession of the sample from time of collection to its arrival at the laboratory. The sample control officer at the laboratory will verify sample integrity and confirm that it was collected in the proper container, preserved correctly, and that there is an adequate volume for analysis. If these conditions are met, the sample will be assigned a unique log number for identification throughout analysis and reporting. The log number will be recorded on the chain-of-custody card and in the legally required log book Brown and Caldwell

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[a]Federal Register, Volume 49, No. 209 p. 43234-43442 (October 26, 1984) and Volume 50, No. 3, p. 690-697 (January 4, 1985).

maintains at the laboratory. The sample description, date received, client's name, and any other relevant information will also be recorded.

Laboratory Analytical Quality Assurance

In addition to routine calibration of the instruments with standards and blanks, the analyst is required to run duplicates and spikes on 10 percent of the analyses to ensure an added measure of precision and accuracy. Accuracy is also verified through the following:

1. Certification by California Department of Health Services.

2. Participation in interlaboratory or round-robin programs.

3. "Blind" samples are submitted by the laboratory's quality assurance officer on a weekly basis. These are prepared from National Bureau of Standards or U.S. Environmental Protection Agency reference standards.

Miscellaneous Checks of Accuracy

Where trace analysis is involved, purity of the solvents, reagents, and gases employed is of great concern. Brown and Caldwell maintains service contracts on all major instrumentation, i.e., gas chromatographs, atomic absorption, ion chromatography, and total organic carbon analyzers are all serviced and maintained regularly. Balances and spectrophotometers are also checked on a regular basis. Programmable calculations are provided to minimize human error in repetitive calculations.

Brown and Caldwell encourages the professional development of the analyst through reimbursement for books, conferences, and successful completion of courses. Employees are evaluated by the quality assurance officer to ensure their understanding of the individual tests.

Brown and Caldwell feels the above program is more than sufficient for most of our clients' needs. Brown and Caldwell can provide additional quality assurance such as spikes and duplicates on all analyses for particular clients at their expense. The industrial client, in particular, may find this approach to be the most acceptable in terms of identifying problem areas and providing confidence limits for a given parameter. Communication with the client is essential in the determination of inferences due to treatment conditions such as addition of chlorine, brine, flocculants, acids, and other chemicals which may affect analytical results.

APPENDIX B

SAFETY PROGRAM

APPENDIX B

SAFETY PROGRAM

It is important that the on-site safety program be designed to protect the worker from direct skin contact, inhalation, or ingestion of potentially hazardous materials that may be encountered at the site. It should also familiarize the worker with appropriate first aid procedures in the event of a harmful exposure. In order to do this, the potentially hazardous properties of the materials and their toxic effects must be understood. Brown and Caldwell has reviewed the results of prior chemical analyses performed on samples obtained from the Topock site. This information was used to develop the following site safety plan for this work.

Personnel Protection

Heavy metals have been identified in the wastewater stream at the site. Additionally, sodium hydroxide and sulfur dioxide are used to treat the wastewater. The personnel protection plan for this project is designed to prevent sampling personnel from exposure to potentially harmful chemicals known to be present on site.

To prevent direct skin contact, the following protective clothing will be worn while working on site:

1. Hard hat with optional face shield.
2. Tyvek coveralls while sampling at all sites except the evaporation ponds.
3. Disposable vinyl gloves, changed between samples.
4. Neoprene boots with steel toe.
5. Goggles to guard against splash unless face shield is used.

If there is significant dust observed during the sampling operations, dust masks will be worn. U.S. Coast Guard-approved life jackets will be worn if a boat is used while obtaining evaporation pond samples.

No eating! drinking, or smoking will be allowed in the vicinity of the samplzng operations. No contact lenses will be worn by drilling or sampling personnel.

Procedures

Personal protective equipment shall be donned before sampling. The sleeves of the coveralls shall be outside of the cuffs of' the

gloves to facilitate removal of clothing with the least contamination to personnel. If at any time the protective clothing (coveralls, boots, or gloves) become wet or contaminated, they will be removed immediately.

Decontamination Procedures

At the end of the workday, the following procedures will be used to allow for the safe removal and decontamination of protective equipment:

1. Boots and gloves will be washed with Alconox and tap water, then rinsed before removal.

2. Boots and coveralls will be removed before the gloves are removed.

3. Disposable clothing will be placed in plastic bags and disposed of properly.

4. Gloves will then be removed and hands washed with soap and water.

First Aid

On-site personnel will be informed of the symptoms related to exposure to significant concentrations of the compounds that may be encountered. Immediate symptoms include irritation of the eyes, nose, and skin; headache; dizziness; lightheadedness; incoordination; nausea; vomiting; and eventually unconsciousness. In the event that any on-site personnel experience such symptoms, operations will be stopped and medical attention will be obtained for the victim as required.

First aid for chemical exposure is as follows:

Direct Contact

Skin--remove contaminated clothing immediately. Flush affected area immediately with ample amounts of water, then wash with soap and water.

Eyes--hold the eyelid open and flush with copious amounts of water.

Inhalation

Remove the victim to fresh air immediately; give artificial respiration as necessary.

In case of a major exposure of any kind, obtain medical help immediately. Brown and Caldwell will identity local medical facilities before work begins and a list of emergency numbers will be available during operations.

Line of Authority

The on-site Brown and Caldwell geohydrologist has on-site authority as to saiety equipment and procedures employed, consistent with this work plan and direction from the project manager.

Emergency Services

The following emergency numbers apply to the area where site work will be conducted:

Fire: (619) 326-3211
Police: (619) 326-2111

APPENDIX C

LABORATORY ANALYTICAL REPORTS

FC

BROWN AND CALDWELL

ANALYTICAL LABORATORIES

LOG NO: P85-08-19

Received: 13 AUG 8

Reported: 28 AUG 8

Glen Wyatt
Brown & Caldwell
3480 Buskirk Avenue
Pleasant Hill, CA 94523

Project: 2339-02 TOPOK CLOSUR

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPL
08-190-1	COOLING TOWER "A" WATER	08 AUG 1
08-190-2	COOLING TOWER "B" WATER	08 AUG 1

PARAMETER	08-190-1	08-190-2
Hexavalent Chromium, mg/L	0.11	0.68

For

Edward Wilson, Laboratory Director

372 SOUTH FAIR OAKS AVENUE · PASADENA CA 91105 (818) 796-7333 (213) 681-4586

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

Glen Wyatt
Brown & Caldwell
3480 Buskirk Avenue
Pleasant Hill, CA 94523

Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPLED
08-129-3	COOLING TOWER WATER COMPOSITE (A&B)	08 AUG 8
08-129-4	PROCESS PUMP TANK	08 AUG 8
08-129-5	TRANSFER PUMP WATER	08 AUG 8

PARAMETER	08-129-3	08-129-4	08-129-5
Antimony, mg/L	<0.024	<0.024	<0.024
Arsenic, mg/L	0.060	0.052	0.048
Barium, mg/L	<0.80	2.1	2.3
Beryllium, mg/L	<0.02	<0.02	<0.02
Cadmium, mg/L	<0.008	<0.008	<0.008
Chromium, mg/L	0.99	2.9	7.0
Cobalt, mg/L	<0.07	<0.07	<0.07
Copper, mg/L	0.05	0.05	0.07
Lead, mg/L	<0.2	<0.2	<0.2
Mercury, mg/L	0.002	<0.001	<0.001
Molybdenum, mg/L	<1.0	<1.0	<0.91
Nickel, mg/L	<0.06	<0.06	<0.06
Selenium, mg/L	<0.011	<0.011	<0.011
Silver, mg/L	<0.02	<0.02	<0.02
Thallium, mg/L	<0.24	<0.24	<0.24
Vanadium, mg/L	<2.3	<2.3	<2.3
Zinc, mg/L	1.4	0.91	1.3
Nitric Acid Digestion, Date	08/13/85	08/13/85	08/13/85
Hexavalent Chromium, mg/L	0.60	1.7	2.3

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

Glen Wyatt
Brown & Caldwell
3480 Buskirk Avenue
Pleasant Hill, CA 94523

Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPLEI
08-129-3	COOLING TOWER WATER COMPOSITE (A&B)	08 AUG 8!
08-129-4	PROCESS PUMP TANK	08 AUG 8!
08-129-5	TRANSFER PUMP WATER	08 AUG 8!

PARAMETER	08-129-3	08-129-4	08-129-5
Fluoride, mg/L	28	28	25
pH, Units	6.1	7.5	3.8
Filterable Residue, mg/L	6500	6600	6000
Oil and Grease, mg/L	<8	<8	8

PG50027631

LOG NO: P85-08-12

Received: 08 AUG 8
Reported: 04 SEP 8

Glen Wyatt
Brown & Caldwell
3480 Buskirk Avenue
Pleasant Hill, CA 94523

Project: 2339-02 TOPOK CLOSURI

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SLUDGE SAMPLES	DATE SAMPLI
08-129-6	TRANSFER SUMP SLUDGE	08 AUG 8

PARAMETER	08-129-6
Chromium, mg/kg	810
Nitric Acid Digestion, Date	08/16/85
Hexavalent Chromium, mg/kg	<1.0

372 SOUTH FAIR OAKS AVENUE PASADENA, CA 91105 (818) 795-7543 (213) 681-4655

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

Glen Wyatt
Brown & Caldwell
3480 Buskirk Avenue
Pleasant Hill, CA 94523

Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SLUDGE SAMPLES	DATE SAMPLEI
08-129-7	PRECIPITATE TANK SLUDGE	08 AUG 8!

PARAMETER	08-129-7
Antimony, mg/kg	<0.61
Arsenic, mg/kg	3.1
Barium, mg/kg	170
Beryllium, mg/kg	<0.83
Cadmium, mg/kg	<0.28
Chromium, mg/kg	2000
Cobalt, mg/kg	<1.8
Copper, mg/kg	28
Lead, mg/kg	8.7
Mercury, mg/kg	<0.50
Molybdenum, mg/kg	<51
Nickel, mg/kg	2.6
Selenium, mg/kg	<0.36
Silver, mg/kg	0.51
Thallium, mg/kg	<5.0
Vanadium, mg/kg	<64
Zinc, mg/kg	290
Nitric Acid Digestion, Date	08/16/85
Hexavalent Chromium, mg/kg	<1.0
Fluoride, mg/kg	550
pH, Units	8.2

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SLUDGE SAMPLES	DATE SAMPLE
08-129-7	PRECIPITATE TANK SLUDGE	08 AUG 8

PARAMETER	08-129-7
Oil and Grease, mg/kg	1400

373 SOUTH FAIR OAKS AVENUE PASADENA CA 91105 (818) 795-7543 (213) 681-4646

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPLED
08-129-8	CHROMIUM REDUCTION TANK WATER COMPOSITE	08 AUG 85

PARAMETER	08-129-8
Antimony, mg/L	<0.026
Arsenic, mg/L	0.045
Barium, mg/L	2.3
Beryllium, mg/L	<0.02
Cadmium, mg/L	<0.008
Chromium, mg/L	7.2
Cobalt, mg/L	<0.07
Copper, mg/L	0.58
Lead, mg/L	<0.2
Mercury, mg/L	<0.001
Molybdenum, mg/L	<1.0
Nickel, mg/L	<0.06
Selenium, mg/L	<0.011
Silver, mg/L	<0.02
Thallium, mg/L	<0.24
Vanadium, mg/L	<2.3
Zinc, mg/L	1.3
Nitric Acid Digestion, Date	08/13/85
Hexavalent Chromium, mg/L	<0.1
Fluoride, mg/L	2.5
pH, Units	3.6

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LOG NO: P85-08-12

Received: 08 AUG 8
Reported: 04 SEP 8

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Project: 2339-02 TOPOK CLOSUR

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPL
08-129-8	CHROMIUM REDUCTION TANK WATER COMPOSITE	08 AUG 8

PARAMETER	08-129-8
Filterable Residue, mg/L	6100
Oil and Grease, mg/L	<8

372 SOUTH FAIR OAKS AVENUE, PASADENA, CA 91105 (818) 795-7353 (213) 681-4655

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SLUDGE SAMPLES	DATE SAMPLED
08-129-9	DRYING BED SLUDGE	08 AUG 85

PARAMETER	08-129-9
Antimony, mg/kg	<0.72
Arsenic, mg/kg	12
Barium, mg/kg	340
Beryllium, mg/kg	<0.83
Cadmium, mg/kg	0.32
Chromium, mg/kg	3500
Cobalt, mg/kg	4.8
Copper, mg/kg	130
Lead, mg/kg	470
Mercury, mg/kg	<0.50
Molybdenum, mg/kg	<51
Nickel, mg/kg	10
Selenium, mg/kg	<0.36
Silver, mg/kg	0.72
Thallium, mg/kg	<5.0
Vanadium, mg/kg	<64
Zinc, mg/kg	2900
Nitric Acid Digestion, Date	08/16/85
Hexavalent Chromium, mg/kg	590
Fluoride, mg/kg	14
pH, Units	8.3

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LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, NONAQUEOUS SAMPLES	DATE SAMPLE
08-129-10	EAST DRYING BED CONCRETE	08 AUG 8
08-129-11	WEST DRYING BED CONCRETE	08 AUG 8

PARAMETER	08-129-10	08-129-11
Antimony, mg/kg	<0.72	<0.72
Arsenic, mg/kg	3.3	1.2
Barium, mg/kg	230	150
Beryllium, mg/kg	<0.83	<0.83
Cadmium, mg/kg	<0.28	<0.28
Chromium, mg/kg	500	470
Cobalt, mg/kg	5.6	2.4
Copper, mg/kg	32	29
Lead, mg/kg	14	12
Mercury, mg/kg	<0.50	<0.50
Molybdenum, mg/kg	<51	<51
Nickel, mg/kg	9.0	6.7
Selenium, mg/kg	<0.36	<0.36
Silver, mg/kg	1.4	1.4
Thallium, mg/kg	<5.0	<5.0
Vanadium, mg/kg	<64	<64
Zinc, mg/kg	330	150
Nitric Acid Digestion, Date	08/16/85	08/16/85
Hexavalent Chromium, mg/kg	<1.0	<1.0
Fluoride, mg/kg	1.8	1.2

[illegible] PALM OAKS AVENUE PASADENA, CA 91105 [illegible]

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Pleasant Hill, CA 94523

Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, NONAQUEOUS SAMPLES	DATE SAMPLEI
08-129-10	EAST DRYING BED CONCRETE	08 AUG 8[illegible]
08-129-11	WEST DRYING BED CONCRETE	08 AUG 8[illegible]

PARAMETER	08-129-10	08-129-11
pH, Units	10	11

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LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SLUDGE SAMPLES	DATE SAMPLE
08-129-12	EVAPORATING POND SLUDGE 1-1	08 AUG 8
08-129-13	EVAPORATING POND SLUDGE 1-2	08 AUG 8
08-129-14	EVAPORATING POND SLUDGE 1-3	08 AUG 8
08-129-15	EVAPORATING POND SLUDGE 2-1	08 AUG 8
08-129-16	EVAPORATING POND SLUDGE 2-2	08 AUG 8
08-129-17	EVAPORATING POND SLUDGE 2-3	08 AUG 8

PARAMETER	08-129-12	08-129-13	08-129-14	08-129-15	08-129-16	08-129-1
Antimony, mg/kg	<0.72	<0.72	<0.72	<0.72	<0.72	<0.7
Arsenic, mg/kg	3.1	2.3	3.2	2.3	3.6	2.
Barium, mg/kg	86	79	62	66	82	8
Beryllium, mg/kg	<0.83	<0.83	<0.83	<0.83	<0.83	<0.8
Cadmium, mg/kg	<0.28	<0.28	<0.28	<0.28	<0.28	<0.2
Chromium, mg/kg	270	1000	900	640	580	120
Cobalt, mg/kg	<1.7	<1.7	<1.7	<1.7	<1.7	<1.
Copper, mg/kg	17	38	31	21	18	2
Lead, mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.
Mercury, mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5
Molybdenum, mg/kg	<51	<51	<51	<51	<51	<5
Nickel, mg/kg	2.3	2.5	2.2	1.9	1.9	2.
Selenium, mg/kg	<0.36	0.39	<0.36	<0.32	<0.32	<0.3
Silver, mg/kg	0.72	0.98	0.72	0.98	0.98	1.
Thallium, mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.
Vanadium, mg/kg	<64	<64	<64	<64	<64	<6

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LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SLUDGE SAMPLES	DATE SAMPLEI
08-129-12	EVAPORATING POND SLUDGE 1-1	08 AUG 8!
08-129-13	EVAPORATING POND SLUDGE 1-2	08 AUG 8!
08-129-14	EVAPORATING POND SLUDGE 1-3	08 AUG 8!
08-129-15	EVAPORATING POND SLUDGE 2-1	08 AUG 8!
08-129-16	EVAPORATING POND SLUDGE 2-2	08 AUG 8!
08-129-17	EVAPORATING POND SLUDGE 2-3	08 AUG 8!

PARAMETER	08-129-12	08-129-13	08-129-14	08-129-15	08-129-16	08-129-17
Zinc, mg/kg	310	540	390	550	450	47C
Nitric Acid Digestion, Date	08/16/85	08/16/85	08/16/85	08/16/85	08/16/85	08/16/8!
Hexavalent Chromium, mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.C
Fluoride, mg/kg	5.2	8.0	10	26	28	24
pH, Units	8.9	8.1	8.3	8.1	7.9	7.2

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LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SLUDGE SAMPLES	DATE SAMPLEI
08-129-18	EVAPORATING POND SLUDGE 3-1	08 AUG 8!
08-129-19	EVAPORATING POND SLUDGE 3-2	08 AUG 8!
08-129-20	EVAPORATING POND SLUDGE 3-3	08 AUG 8!
08-129-21	EVAPORATING POND SLUDGE 4-1	08 AUG 8!
08-129-22	EVAPORATING POND SLUDGE 4-2	08 AUG 8!
08-129-23	EVAPORATING POND SLUDGE 4-3	08 AUG 8!

PARAMETER	08-129-18	08-129-19	08-129-20	08-129-21	08-129-22	08-129-2:
Antimony, mg/kg	<0.57	<0.57	<0.57	<0.57	<0.57	<0.5:
Arsenic, mg/kg	2.3	3.0	3.0	1.7	1.3	2.7
Barium, mg/kg	140	190	140	260	150	11(
Beryllium, mg/kg	<0.83	<0.83	<0.83	<0.83	<0.83	<0.8:
Cadmium, mg/kg	<0.28	<0.28	<0.28	<0.28	<0.28	<0.2:
Chromium, mg/kg	350	430	530	18	24	39(
Cobalt, mg/kg	2.8	2.7	3.0	3.8	3.7	2.(
Copper, mg/kg	12	12	18	6.7	5.2	9.(
Lead, mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Mercury, mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Molybdenum, mg/kg	<51	<51	<51	<51	<51	<51
Nickel, mg/kg	5.3	4.9	5.7	5.1	4.9	5.3
Selenium, mg/kg	<0.32	<0.36	<0.36	<0.36	<0.32	<0.36
Silver, mg/kg	0.86	0.83	0.58	0.55	0.64	0.54
Thallium, mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vanadium, mg/kg	<64	<64	<64	<64	<64	<64

272 SOUTH FAIR OAKS AVENUE, PASADENA CA 91105 (818) 795-7553 (213) 681-4855

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SLUDGE SAMPLES	DATE SAMPLE
08-129-18	EVAPORATING POND SLUDGE 3-1	08 AUG 8
08-129-19	EVAPORATING POND SLUDGE 3-2	08 AUG 8
08-129-20	EVAPORATING POND SLUDGE 3-3	08 AUG 8
08-129-21	EVAPORATING POND SLUDGE 4-1	08 AUG 8
08-129-22	EVAPORATING POND SLUDGE 4-2	08 AUG 8
08-129-23	EVAPORATING POND SLUDGE 4-3	08 AUG 8

PARAMETER	08-129-18	08-129-19	08-129-20	08-129-21	08-129-22	08-129-2
Zinc, mg/kg	480	530	580	35	31	44
Nitric Acid Digestion, Date	08/16/85	08/16/85	08/16/85	08/16/85	08/16/85	08/16/8
Hexavalent Chromium, mg/kg	6.2	5.0	<1.0	<1.0	<1.0	3.
Fluoride, mg/kg	16	18	10	11	7.6	1
pH, Units	8.0	8.3	8.0	9.3	9.2	8.

873 SOUTH FAIR OAKS AVENUE PASADENA CA 91105 (818) 795-7585 (213) 681-4585

LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPLE
08-129-24	EVAPORATING POND 3 WATER	08 AUG 8
08-129-25	EVAPORATING POND 4 WATER	08 AUG 8

PARAMETER	08-129-24	08-129-25
Antimony, mg/L	<0.022	<0.022
Arsenic, mg/L	0.048	<0.023
Barium, mg/L	2.3	1.4
Beryllium, mg/L	<0.02	<0.02
Cadmium, mg/L	<0.008	<0.008
Chromium, mg/L	1.6	0.49
Cobalt, mg/L	<1.7	<0.07
Copper, mg/L	0.07	0.10
Lead, mg/L	<0.2	<0.2
Mercury, mg/L	<0.001	<0.004
Molybdenum, mg/L	<1.0	<1.0
Nickel, mg/L	<0.06	<0.06
Selenium, mg/L	<0.022	0.16
Silver, mg/L	0.03	0.05
Thallium, mg/L	<0.24	<0.24
Vanadium, mg/L	<2.3	<2.3
Zinc, mg/L	0.34	0.04
Nitric Acid Digestion, Date	08/13/85	08/13/85
Hexavalent Chromium, mg/L	0.75	<0.1
Fluoride, mg/L	28	53

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LOG NO: P85-08-129

Received: 08 AUG 85
Reported: 04 SEP 85

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Project: 2339-02 TOPOK CLOSURE

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WASTEWATER SAMPLES	DATE SAMPLED
08-129-24	EVAPORATING POND 3 WATER	08 AUG 85
08-129-25	EVAPORATING POND 4 WATER	08 AUG 85

PARAMETER	08-129-24	08-129-25
pH, Units	7.7	8.3
Filterable Residue, mg/L	22,000	33,000
Oil and Grease, mg/L	<8	<8

Edward Wilson, Laboratory Director

373 SOUTH FAIR OAKS AVENUE PASADENA CA 91105 (818) 795-7933 (213) 681-4835

G-7

WASTE STREAM ANALYSIS

- Sample A - make-up water
- Sample B - cooling tower blowdown
- Sample C - separator influent
- Sample D - separator effluent

TOP B5 0007 0000

BROWN AND CALDWELL BC
ANALYTICAL LABORATORIES

LOG NO: E86-11-434

Received: 20 NOV 86
Reported: 16 DEC 86

[redacted]

Project: 18748

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, WATER SAMPLES	DATE SAMPLED
11-434-1	Sample A - make up water	18 NOV 86
11-434-2	Sample B - cooling tower blowdown	18 NOV 86
11-434-3	Sample C - separator influent	18 NOV 86
11-434-4	Sample D - separator effluent	18 NOV 86

PARAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
Aquatic Bioassay, Survival, Percent	---	---	---	65
Bioassay Set Up Date	---	---	---	11.15.86
Nitrate (as N), mg/L	2.4	27	---	---
Silica (as SiO2), mg/L	24	150	---	---
Total Phosphorous (as P), mg/L	<0.01	3.0	---	---
Total Organic Carbon (TOC), mg/L	<1	9	---	35
Ammonia Nitrogen (as N), mg/L	<0.10	2.2	---	---
Color, APHA U	12	3	---	---
Color, TON 40 C	---	3	---	---
Specific Conductance, umhos/cm	1560	9590	---	6040 incorrect use field value of 1901
Turbidity, NTU	1.6	3.2	---	14
pH, Units	8.3	5.9	---	7.0
Filterable Residue (TDS), mg/L	860	6610	---	910
Oil and Grease, mg/L	---	---	48	60
Alkalinity				
Carbonate Alk (as CaCO3), mg/L	24	<1.0	---	---
Bicarb Alk (as CaCO3), mg/L	63	15	---	---
Hydroxide Alk (as CaCO3), mg/L	<1.0	<1.0	---	---
Total Alkalinity (as CaCO3), mg/L	87	15	---	---
Chloride, mg/L	390	2750	---	---
Fluoride, mg/L	---	30	---	---
Sulfate, mg/L	91	1260	---	---
Total Organic Halides (TOX), mg/L	<0.05	6.3	---	0.081
Antimony, mg/L	---	---	---	0.2

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BROWN AND CALDWELL BC
ANALYTICAL LABORATORIES

LOG NO: E86-11-434

Received: 20 NOV 86
Reported: 16 DEC 86

Project: 18748

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, WATER SAMPLES	DATE SAMPLED
11-434-1	Sample A - make up water	18 NOV 86
11-434-2	Sample B - cooling tower blowdown	18 NOV 86
11-434-3	Sample C - separator influent	18 NOV 86
11-434-4	Sample D - separator effluent	18 NOV 86

PARAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
Arsenic, mg/L	0.008	0.061	0.011	0.042
Barium, mg/L	<0.1	---	<0.1	---
Beryllium, mg/L	---	---	---	<0.01
Cadmium, mg/L	<0.01	<0.01	<0.01	<0.01
Calcium, mg/L	29	260	---	---
Chromium, mg/L	<0.02	0.16	0.05	0.10
Copper, mg/L	---	---	---	0.30
Iron, mg/L	0.57	1.0	0.65	---
Lead, mg/L	<0.1	<0.1	<0.1	<0.1
Magnesium, mg/L	5.3	36	---	---
Manganese, mg/L	<0.01	0.06	<0.01	---
Mercury, mg/L	<0.0001	0.0001	0.0001	0.0001
Nickel, mg/L	---	---	---	<0.05
Potassium, mg/L	6.5	53	---	---
Selenium, mg/L	<0.001	<0.001	<0.001	0.002
Silver, mg/L	<0.01	<0.01	<0.01	<0.01
Sodium, mg/L	240	1800	---	---
Thallium, mg/L	---	---	---	0.5
Zinc, mg/L	---	---	---	1.1
Nitric Acid Digestion, Date	11.25.86	11.25.86	11.25.86	11.25.86

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BROWN AND CALDWELL
ANALYTICAL LABORATORIES

LOG NO: E86-11-434

Received: 20 NOV 86
Reported: 16 DEC 86

Project: 18748

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WATER SAMPLES	DATE SAMPLED
11-434-1	Sample A - make up water	18 NOV 86
11-434-2	Sample B - cooling tower blowdown	18 NOV 86
11-434-3	Sample C - separator influent	18 NOV 86
11-434-4	Sample D - separator effluent	18 NOV 86

PARAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
EPA Method 608 Pesticides/PCBs				
Date Extracted	---	---	---	11.26.86
Date Analyzed	---	---	---	12.03.86
Aldrin, ug/L	---	---	---	<0.05
Chlordane, ug/L	---	---	---	<0.3
Dieldrin, ug/L	---	---	---	<0.05
Endosulfan I, ug/L	---	---	---	<0.05
Endosulfan II, ug/L	---	---	---	<0.05
Endosulfan sulfate, ug/L	---	---	---	<0.1
Endrin, ug/L	---	---	---	<0.1
Endrin aldehyde, ug/L	---	---	---	<0.1
Heptachlor epoxide, ug/L	---	---	---	<0.05
Heptachlor, ug/L	---	---	---	<0.05
Aroclor 1016, ug/L	---	---	---	<0.3
Aroclor 1221, ug/L	---	---	---	<0.3
Aroclor 1232, ug/L	---	---	---	<0.3
Aroclor 1242, ug/L	---	---	---	<0.3
Aroclor 1248, ug/L	---	---	---	<0.3
Aroclor 1254, ug/L	---	---	---	<0.3
Aroclor 1260, ug/L	---	---	---	<0.3
Aroclor 1262, ug/L	---	---	---	<0.3
Toxaphene, ug/L	---	---	---	<1
BHC, alpha isomer, ug/L	---	---	---	<0.05
BHC, beta isomer, ug/L	---	---	---	<0.05

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TOP B5 0007 0007

POOR QUALITY ORIGINAL

BROWN AND CALDWELL BC
ANALYTICAL LABORATORIES

LOG NO: E86-11-434

Received: 20 NOV 86
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Project: 18748

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, WATER SAMPLES	DATE SAMPLED
11-434-1	Sample A - make up water	18 NOV 86
11-434-2	Sample B - cooling tower blowdown	18 NOV 86
11-434-3	Sample C - separator influent	18 NOV 86
11-434-4	Sample D - separator effluent	18 NOV 86

PARAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
BHC, delta isomer, ug/L	---	---	---	<0.05
BHC, gamma isomer, ug/L	---	---	---	<0.05
p,p'-DDD, ug/L	---	---	---	<0.05
p,p'-DDE, ug/L	---	---	---	<0.05
p,p'-DDT, ug/L	---	---	---	<0.1

POOR QUALITY ORIGINAL

BROWN AND CALDWELL BC
ANALYTICAL LABORATORIES

LOG NO: E86-11-434

Received: 20 NOV 86
Reported: 16 DEC 86

Project: 18748

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, WATER SAMPLES	DATE SAMPLED
11-434-1	Sample A - make up water	18 NOV 86
11-434-2	Sample B - cooling tower blowdown	18 NOV 86
11-434-3	Sample C - separator influent	18 NOV 86
11-434-4	Sample D - separator effluent	18 NOV 86

PARAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
B/N,A Ext. Priority Pollutants				
Extraction	---	---	---	11.26.86
Date Analyzed	---	--	---	12.02.86
1,2,4-Trichlorobenzene, ug/L	---	---	---	<2
1,2-Dichlorobenzene, ug/L	---	---	---	<2
1,2-Diphenylhydrazine, ug/L	---	---	---	<2
1,3-Dichlorobenzene, ug/L	---	---	---	<2
1,4-Dichlorobenzene, ug/L	---	---	---	<2
2,4,6-Trichlorophenol, ug/L	---	---	---	<2
2,4-Dichlorophenol, ug/L	---	---	---	<2
2,4-Dimethylphenol, ug/L	---	---	---	<2
2,4-Dinitrotoluene, ug/L	---	---	---	<2
2,4-Dinitrophenol, ug/L	---	---	---	<50
2,6-Dinitrotoluene, ug/L	---	---	---	<2
2-Chloronaphthalene, ug/L	---	---	---	<2
2-Nitrophenol, ug/L	---	---	---	<2
2-Chlorophenol, ug/L	---	---	---	<2
2-Methyl-4,6-dinitrophenol, ug/L	---	---	---	<100
3,3'-Dichlorobenzidine, ug/L	---	---	---	<80
4-Bromophenylphenylether, ug/L	---	---	---	<2
4-Chloro-3-methylphenol, ug/L	---	---	---	<2
4-Chlorophenylphenylether, ug/L	---	---	---	<2
4-Nitrophenol, ug/L	---	---	---	<50
Acenaphthene, ug/L	---	---	---	<2

1455 POWELL STREET EMERYVILLE CA 94608 (415) 428-2300

POOR QUALITY ORIGINAL

BROWN AND CALDWELL BC
ANALYTICAL LABORATORIES

LOG NO: E86-11-434

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11-434-3	Sample C - separator influent	18 NOV 86
11-434-4	Sample D - separator effluent	18 NOV 86

RAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
Acenaphthylene, ug/L	---	---	---	<2
Anthracene, ug/L	---	---	---	<2
Bis(2-ethylhexyl)phthalate, mg/L	---	.	---	<200
Benzidine, ug/L	---	---	---	<80
Bis(2-chloroethyl) Ether, ug/L	---	---	---	<2
Bis(2-Chloroisopropyl)ether, ug/L	---	---	---	<2
Bis(2-chloroethoxy)methane, ug/L	---	---	---	<2
Benzo(a)anthracene, ug/L	---	---	---	<2
Benzo(a)pyrene, ug/L	---	---	---	<2
Benzo(b)fluoranthene, ug/L	---	---	---	<2
Benzo(g,h,i)perylene, ug/L	---	---	---	<2
Benzo(k)Fluoranthene, ug/L	---	---	---	<2
Butylbenzylphthalate, ug/L	---	---	---	<2
Chrysene, ug/L	---	---	---	<2
Di-n-octylphthalate, ug/L	---	---	---	<2
Dibenzo(a,h)anthracene, ug/L	---	---	---	<2
Dibutylphthalate, ug/L	---	---	---	<100
Diethylphthalate, ug/L	---	---	---	<2
Dimethylphthalate, ug/L	---	---	---	<50
Fluorene, ug/L	---	---	---	<2
Fluoranthene, ug/L	---	---	---	<2
Hexachlorobenzene, ug/L	---	---	---	<2
Hexachlorobutadiene, ug/L	---	---	---	<2
Hexachlorocyclopentadiene, ug/L	---	---	---	<2

POOR QUALITY ORIGINAL

BROWN AND CALDWELL
ANALYTICAL LABORATORIES

LOG NO: E86-11-434

Received: 20 NOV 86
Reported: 16 DEC 86

Project: 18748

REPORT OF ANALYTICAL RESULTS

OG NO	SAMPLE DESCRIPTION, WATER SAMPLES	DATE SAMPLED
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1-434-2	Sample B - cooling tower blowdown	18 NOV 86
1-434-3	Sample C - separator influent	18 NOV 86
1-434-4	Sample D - separator effluent	18 NOV 86

RAMETER	P-1 11-434-1	P-2 11-434-2	P-1 11-434-3	P-4 11-434-4
Hexachloroethane, ug/L	---	---	---	<2
Indeno(1,2,3-c,d)Pyrene, ug/L	---	---	---	<2
Isophorone, ug/L	---	---	---	<2
N-Nitrosodi-n-propylamine, ug/L	---	---	---	<80
N-Nitrosodimethylamine, ug/L	---	---	---	<160
N-Nitrosodiphenylamine, ug/L	---	---	---	<2
Naphthalene, ug/L	---	---	---	<2
Nitrobenzene, ug/L	---	---	---	<2
Pentachlorophenol, ug/L	---	---	---	<2
Phenanthrene, ug/L	---	---	---	<2
Phenol, ug/L	---	---	---	<2
Pyrene, ug/L	---	---	---	<2
Semi-Quantified Results **				
C10-C35 Hydrocarbon Matrix, ug/L	---	---	---	3000

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

TOP B5 0007 0074

POOR QUALITY ORIGINAL

BROWN AND CALDWELL
ANALYTICAL LABORATORIES

LOG NO: E86-11-434

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REPORT OF ANALYTICAL RESULTS

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-434-3	Sample C - separator influent	18 NOV 86
-434-4	Sample D - separator effluent	18 NOV 86

RAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
/N,A Ext. Priority Pollutants				
Extraction	---	---	---	11.26.86
Date Analyzed	---	---	---	12.02.86
,2,4-Trichlorobenzene, ug/L	---	---	---	<2
1,2-Dichlorobenzene, ug/L	---	---	---	<2
,2-Diphenylhydrazine, ug/L	---	---	---	<2
,3-Dichlorobenzene, ug/L	---	---	---	<2
1,4-Dichlorobenzene, ug/L	---	---	---	<2
2,4,6-Trichlorophenol, ug/L	---	---	---	<2
2,4-Dichlorophenol, ug/L	---	---	---	<2
2,4-Dimethylphenol, ug/L	---	---	---	<2
2,4-Dinitrotoluene, ug/L	---	---	---	<2
2,4-Dinitrophenol, ug/L	---	---	---	<50
2,6-Dinitrotoluene, ug/L	---	---	---	<2
2-Chloronaphthalene, ug/L	---	---	---	<2
2-Nitrophenol, ug/L	---	---	---	<2
2-Chlorophenol, ug/L	---	---	---	<2
2-Methyl-4,6-dinitrophenol, ug/L	---	---	---	<100
3,3'-Dichlorobenzidine, ug/L	---	---	---	<80
4-Bromophenylphenylether, ug/L	---	---	---	<2
4-Chloro-3-methylphenol, ug/L	---	---	---	<2
4-Chlorophenylphenylether, ug/L	---	---	---	<2
4-Nitrophenol, ug/L	---	---	---	<50
Acenaphthene, ug/L	---	---	---	<2

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TOP B5 0070960

POOR QUALITY ORIGINAL

BROWN AND CALDWELL BC
ANALYTICAL LABORATORIES

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1-434-4	Sample D - separator effluent	18 NOV 86

RAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
Hexachloroethane, ug/L	---	---	---	<2
Indeno(1,2,3-c,d)Pyrene, ug/L	---	---	---	<2
Isophorone, ug/L	---	---	---	<2
N-Nitrosodi-n-propylamine, ug/L	---	---	---	<60
N-Nitrosodimethylamine, ug/L	---	---	---	<160
N-Nitrosodiphenylamine, ug/L	---	---	---	<2
Naphthalene, ug/L	---	---	---	<2
Nitrobenzene, ug/L	---	---	---	<2
Pentachlorophenol, ug/L	---	---	---	<2
Phenanthrene, ug/L	---	---	---	<2
Phenol, ug/L	---	---	---	<2
Pyrene, ug/L	---	---	---	<2
Semi-Quantified Results **				
C10-C35 Hydrocarbon Matrix, ug/L	---	---	---	3000

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

POOR QUALITY ORIGINAL

BROWN AND CALDWELL
ANALYTICAL LABORATORIES

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	P-1	P-2	P-3	P-4
PARAMETER	11-434-1	11-434-2	11-434-3	11-434-4
Acenaphthylene, ug/L	---	---	---	<2
Anthracene, ug/L	---	---	---	<2
Bis(2-ethylhexyl)phthalate, mg/L	---	---	---	<200
Benzidine, ug/L	---	---	---	<80
Bis(2-chloroethyl) Ether, ug/L	---	---	---	<2
Bis(2-Chloroisopropyl)ether, ug/L	---	---	---	<2
Bis(2-chloroethoxy)methane, ug/L	---	---	---	<2
Benzo(a)anthracene, ug/L	---	---	---	<2
Benzo(a)pyrene, ug/L	---	---	---	<2
Benzo(b)fluoranthene, ug/L	---	---	---	<2
Benzo(g,h,i)perylene, ug/L	---	---	---	<2
Benzo(k)Fluoranthene, ug/L	---	---	---	<2
Butylbenzylphthalate, ug/L	---	---	---	<2
Chrysene, ug/L	---	---	---	<2
Di-n-octylphthalate, ug/L	---	--	---	<2
Dibenzo(a,h)anthracene, ug/L	---	---	---	<2
Dibutylphthalate, ug/L	---	---	---	<100
Diethylphthalate, ug/L	---	---	---	<2
Dimethylphthalate, ug/L	---	---	---	<50
Fluorene, ug/L	---	---	---	<2
Fluoranthene, ug/L	---	---	---	<2
Hexachlorobenzene, ug/L	---	---	---	<2
Hexachlorobutadiene, ug/L	---	---	---	<2
Hexachlorocyclopentadiene, ug/L	---	---	---	<2

TOP B5 0007 0070

POOR QUALITY ORIGINAL

BROWN AND CALDWELL

ANALYTICAL LABORATORIES

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1-434-4	Sample D - separator effluent	18 NOV 86

PARAMETER	P-1 11-434-1	P-2 11-434-2	P-3 11-434-3	P-4 11-434-4
rgeable Priority Pollutants				
xtraction	---	---	---	12.04.86
1,1-Trichloroethane, ug/L	---	---	---	<1
1,1,2,2-Tetrachloroethane, ug/L	---	---	---	<1
1,1,2-Trichloroethane, ug/L	---	---	---	<1
1-Dichloroethane, ug/L	---	---	---	<1
1,1-Dichloroethylene, ug/L	---	---	---	<1
2-Dichloroethane, ug/L	---	---	---	<1
2-Dichloropropane, ug/L	---	---	---	<1
3-Dichloropropene, ug/L	---	---	---	<1
2-Chloroethylvinylether, ug/L	---	---	---	<1
crolein, ug/L	---	---	---	<10
crylonitrile, ug/L	---	---	---	<10
romodichloromethane, ug/L	---	---	---	<1
romomethane, ug/L	---	---	---	<1
enzene, ug/L	---	---	---	<1
hlorobenzene, ug/L	---	---	---	<1
arbon Tetrachloride, ug/L	---	---	---	<1
hloroethane, ug/L	---	---	---	<1
romoform, ug/L	---	---	---	<1
hloroform, ug/L	---	---	---	<1
hloromethane, ug/L	---	---	---	<1
ibromochloromethane, ug/L	---	--	---	<1
thylbenzene, ug/L	---	---	---	<1

TOP B5 00007000

POOR QUALITY ORIGINAL

BROWN AND CALDWELL
ANALYTICAL LABORATORIES

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REPORT OF ANALYTICAL RESULTS

Page 9

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1-434-3	Sample C - separator influent	18 NOV 86
1-434-4	Sample D - separator effluent	18 NOV 86

	P-1	P-2	P-3	P-4
RAMETER	11-434-1	11-434-2	11-434-3	11-434-4
Methylene Chloride, ug/L	---	---	---	<1
Tetrachloroethylene, ug/L	---	---	---	<1
Trichloroethylene, ug/L	---	---	---	<1
Trichlorofluoromethane, ug/L	---	---	---	<1
Toluene, ug/L	---	---	---	<1
Vinyl Chloride, ug/L	---	---	---	<1
trans-1,2-Dichloroethylene, ug/L	---	---	---	<1
trans-1,3-Dichloropropene, ug/L	---	---	---	<1

emperature assumed to be 20 deg C.

. A. McLean, Laboratory Director

1255 POWELL STREET EMERYVILLE CA 94608 (415) 428-2300

TOP B5 0007-00

POOR QUALITY ORIGINAL

TOXICITY BIOASSAY

BROWN AND CALDWELL
CONSULTING ENGINEERS
ANALYTICAL SERVICES DIVISION
1255 POWELL STREET
EMERYVILLE CA 94608
PHONE (415) 428-2300

Log No E86-11-434-4

Date Sampled 11/18/86
Date Received 11/20/86
Date Reported 12/19/86

Report To:

cc

Laboratory Director

Sample Description Sample D
Test Organism Gasterosteus aculeatus, threespine stickleback Source San Pablo Bay
Dilution Water Brackish Source Berkeley Bay Temperature Range 14.0-17.0 °C

Aeration Air X Oxygen ___ None ___

Bioassay Conditions	Time, hrs	Control No	Control %	Dilution 100%-1 No	100%-1 %	100%-2 No	100%-2 %	No	%	No	%	No	%	No	%	No	%
Organisms Surviving	Start	10	100	10	100	10	100										
	24	10	100	10	100	10	100										
	48	10	100	7	70	7	70										
	72	10	100	6	60	7	70										
	96	10	100	6	60	7	70										
Dissolved Oxygen, mg/l	Start	9.0		7.0		7.0											
	24	8.7		7.5		7.8											
	48	9.0		8.0		7.9											
	72	8.2		7.2		7.0											
	96	8.6		7.6		7.4											
pH	Start	7.4		7.0		7.0											
	24	7.5		7.1		7.1											
	48	7.7		7.4		7.3											
	72	7.6		7.4		7.4											
	96	7.6		7.4		7.4											

RESULTS 96 hr TL_m* none Toxicity Units 0.91 Percent survival in undiluted sample 65

Length of fish cm Max 3.95 Min 2.70 Mean 3.19
Weight of fish g Max 0.63 Min 0.21 Mean 0.34

*In cases where 96 hour mortality does not equal or exceed 50% in at least one dilution of the sample no TL_m value established

Analyst C. Cox

vb

G-4

TOP B5 0007-0-

POOR QUALITY ORIGINAL

PG20006967

TABLE 6

HAZARDOUS MATERIALS INVENTORY

FACILITY: TOPOCK COMPRESSOR STATION

SIC 4922

Phone Number: (619) 326-2615

Start File

Item No.	Common and/or Trade Name	Major Chemical Constituents	Approx Min/ Max Conc. (%)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Per Yr.	Unit	Primary Use of Material	Storage and Handling Location
	Acetylene	Acetylene	100						1,000	CF	Welding	Warehouse
	Acetylene	Acetylene	100						337	CF	Welding	Weld shop
	Argon gas	Argon gas	100						280	CF		Weld shop
	Betz 2020 (Powerline 3040)	Potassium Hydroxide Phosphoric Acid	Not on MSDS						370	Gals	Water treatment	Cooling tower A
	Betz 2020 (Powerline 3040)	Potassium Hydroxide Phosphoric Acid	Not on MSDS						370	Gals	Water treatment	Cooling tower B
	Betz 2040 (Powerline 3450)	No Hazardous Ingredients	NA						400	Gals	Water treatment	Cooling tower A
	Betz 2040 (Powerline 3450)	No Hazardous Ingredients	NA					500	400	Gals	Water treatment	Cooling tower B
5	Betz C - 77P	Bromo, chloro and dimethylhydantoin	Not on MSDS	16079-88-2	NA	NA	NA	1,000	3,520	lbs	Water treatment	[illegible]
	Betz foam - trol	Distillate Petroleum Combustible Liquid	Not on MSDS	64742-46-7	UN1268	3	42	55	220	Gals	Water treatment	Haz mat storage
	Betz Powerline 3200	Sodium Nitrite Sodium Molybdate	Not on MSDS	7632-00-0	UN1500	5.1	100 LB	330	770	Gals	Water treatment	Haz mat storage
	Betz Powerline 3200	Sodium Molybdate Sodium Nitrite	Not on MSDS	7632-00-0	UN1500	5.1	100 LB	400	770	Gals	Water treatment	Jacket water cooler
	Betz Slimicide 508 (Powerline 3612)	Alkyl Dimethyl Benzyl Ammonium Chloride/Ethanol	Not on MSDS	68391-01-5	UN1170	3	NA	55	85	Gals	Water treatment	Cooling tower A

TReports>20<100

ANALYTICAL DATA REPORT
SEDIMENT AND SAND SAMPLES
PHASE 3, EVAPORATION PONDS

CLOSURE OF
HAZARDOUS WASTE MANAGEMENT FACILITIES

Prepared for:

PG&E
TOPOCK COMPRESSOR STATION

Prepared by:

MITTELHAUSER CORPORATION
LAGUNA HILLS, CALIFORNIA

REVISION 0: NOVEMBER 1990
REVISION 1: FEBRUARY 1992

PMCOBUS0105825

MITTELHAUSER corporation

PG&E
Topock Compressor Station
Phase 3, Ponds Closure

November 1990
Rev: 0
1352:APPEND

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY RECORDS

PMCOBUS0105882

Enseco

Enseco - CRL
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

May 17, 1990

DHS CERTIFICATE #157

MITTELHAUSER CORP.
23272 MILL CREEK RD., STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Project: (1352-20) PG & E TOPOCK

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: G-9010905-001/027 shown above.

The samples were received by CRL intact and with the chain-of-custody record attached.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.

Solid samples are reported on "as received" basis.

Please note the cross-reference on the following page.

Neal P. Conroy
Reviewed

Yanni Cullen
Approved

PMCOBUS0105883

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco

Enseco - CRL
7440 Lincoln Way • Garden Grove, CA 92641
(714) 895-6570 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

PAGE TWO

May 17, 1990

DHS CERTIFICATE #157

MITTELHAUSER CORP.
23272 HILL CREEK RD., STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Project: (1352-20) PG & E TOPOCK

Please note the cross-reference for EPA Method 340.1/.2 analyses is as follows:

Enseco-Ventura Sample ID	Enseco-CRL Sample ID	Client's Sample ID
0110165501	G-9010905-001	1352-20-01
0110165502	G-9010905-002	1352-20-02
0110165503	G-9010905-003	1352-20-03
0110165504	G-9010905-004	1352-20-04
0110165505	G-9010905-005	1352-20-05
0110165506	G-9010905-006	1352-20-06
0110165507	G-9010905-007	1352-20-07
0110165508	G-9010905-008	1352-20-08
0110165509	G-9010905-009	1352-20-09
0110165510	G-9010905-010	1352-20-10
0110165511	G-9010905-011	1352-20-11
0110165512	G-9010905-012	1352-20-12
0110165513	G-9010905-013	1352-20-13
0110165514	G-9010905-014	1352-20-14
0110165515	G-9010905-015	1352-20-15
0110165516	G-9010905-016	1352-20-16
0110165517	G-9010905-017	1352-20-17
0110165518	G-9010905-018	1352-20-18
0110165519	G-9010905-019	1352-20-19
0110165520	G-9010905-020	1352-20-20
0110165521	G-9010905-021	1352-20-21
0110165522	G-9010905-022	1352-20-22
0110165523	G-9010905-023	1352-20-23
0110165524	G-9010905-024	1352-20-24
0110165525	G-9010905-025	1352-20-25
0110165526	G-9010905-026	1352-20-26
0110165527	G-9010905-027	1352-20-27

PMCOBUS0105884

Neal P. Conroy
Reviewed

Yanni Cullen
Approved

The Report Cover Letter is an integral part of this report.
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Enseco
A CORNING COMPANY

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Date Analyzed: 4-MAY-1990
24-APR-1990
Sample Type: SOLID

Project: (1352-20) PG & E TOPOCK

Sample ID	Antimony/ STLC-DI H20 mg/L EPA 6010	Chromium Tri/STLC-DI H20 mg/L EPA 6010	Copper/STLC-DI H20 mg/L EPA 6010	Molybdenum/ STLC-DI H20 mg/L EPA 6010	Zinc/STLC-DI H20 mg/L EPA 6010
1352-20-01	ND(0.5)	ND(0.05)	ND(0.05)	2.0	ND(0.10)
1352-20-02	ND(0.5)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)
1352-20-03	ND(0.5)	ND(0.05)	ND(0.05)	0.50	ND(0.10)
1352-20-04	ND(0.5)	ND(0.05)	ND(0.05)	0.72	ND(0.10)
1352-20-05	1.0	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)
1352-20-06	ND(0.5)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)
1352-20-07	ND(0.5)	ND(0.05)	ND(0.05)	2.2	ND(0.10)
1352-20-08	ND(0.5)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)
1352-20-09	ND(0.5)	ND(0.05)	ND(0.05)	0.33	ND(0.10)
1352-20-10	ND(0.5)	ND(0.05)	ND(0.05)	1.4	ND(0.10)
1352-20-11	ND(0.5)	ND(0.05)	ND(0.05)	0.40	ND(0.10)
1352-20-12	ND(0.5)	ND(0.05)	ND(0.05)	0.54	ND(0.10)
1352-20-13	ND(0.1)	ND(0.02)	0.05	5	0.02
1352-20-14	ND(0.1)	ND(0.02)	ND(0.05)	0.73	ND(0.02)
1352-20-15	ND(0.1)	ND(0.02)	ND(0.05)	1.9	ND(0.02)
1352-20-16	ND(0.5)	ND(0.05)	ND(0.05)	1.1	ND(0.10)
1352-20-17	ND(0.5)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)
1352-20-18	ND(0.5)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)
1352-20-19	ND(0.5)	ND(0.05)	ND(0.05)	9.0	ND(0.10)
1352-20-20	ND(0.5)	ND(0.05)	ND(0.05)	0.81	ND(0.10)
1352-20-21	ND(0.5)	ND(0.05)	ND(0.05)	4.2	ND(0.10)
1352-20-22	ND(0.5)	ND(0.05)	ND(0.05)	4.8	ND(0.10)
1352-20-23	ND(0.5)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)
1352-20-24	ND(0.5)	ND(0.05)	ND(0.05)	1.6	ND(0.10)
1352-20-25	ND(0.5)	ND(0.05)	ND(0.05)	6.4	ND(0.10)
1352-20-26	ND(0.5)	ND(0.05)	ND(0.05)	0.83	ND(0.10)
1352-20-27	ND(0.5)	ND(0.05)	ND(0.05)	2.4	ND(0.10)
Blank	ND(0.5)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)

Reviewed

Approved

PMCOBUS0105885

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Date Analyzed: 27-APR-1990
2-MAY-1990
24-APR-1990
3-MAY-1990
30-APR-1990
Sample Type: SOLID

Project: (1352-20) PG & E TOPOCK

Sample ID	Arsenic/ STLC-DI H2O mg/L EPA 7061	TDS/STLC-DI mg/L EPA 160.1	Fluoride, STLC (DI H2O EXT) mg/L EPA 340.2	pH units EPA 9045	pH/STLC-DI units EPA 9045
1352-20-01	0.14	6,500	12	7.55	7.68
1352-20-02	0.008	90	4.8	8.94	8.97
1352-20-03	0.03	790	4.9	8.00	7.90
1352-20-04	0.03	3,400	6.7	8.01	7.67
1352-20-05	ND(0.005)	180	2.6	8.99	8.69
1352-20-06	0.008	340	4.7	8.64	8.76
1352-20-07	0.06	11,000	9.0	7.81	7.45
1352-20-08	0.006	260	1.9	8.80	8.66
1352-20-09	0.01	2,030	2.1	8.23	7.74
1352-20-10	0.03	7,800	6.5	7.86	7.50
1352-20-11	0.008	490	1.2	8.60	8.47
1352-20-12	0.01	4,030	3.2	8.02	7.73
1352-20-13	0.06	8,800	5.7	7.60	7.49
1352-20-14	0.008	1,600	0.7	8.04	8.23
1352-20-15	0.02	4,400	1.9	7.62	7.78
1352-20-16	0.06	5,010	9.1	8.20	7.20
1352-20-17	ND(0.005)	1,200	1.6	7.79	8.52
1352-20-18	0.008	1,600	2.5	7.90	7.91
1352-20-19	0.15	11,000	7.5	8.01	7.60
1352-20-20	ND(0.005)	2,100	1.7	8.40	8.41
1352-20-21	0.07	7,000	4.5	8.09	7.82
1352-20-22	0.14	8,400	8.3	7.99	7.83
1352-20-23	ND(0.005)	5,600	1.1	8.44	8.43
1352-20-24	0.04	4,700	3.4	8.23	8.03
1352-20-25	0.09	7,500	5.8	8.03	7.58
1352-20-26	0.02	2,000	2.0	8.56	9.18
1352-20-27	0.03	3,600	3.9	8.31	8.23
Blank	ND(0.001)	ND(10)	ND(0.1)	NA	NA

Reviewed

Approved

PMCOBUS0105886

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Date Analyzed: 30-APR-1990
Sample Type: SOLID

Project: (1352-20) PG & E TOPOCK

Sample ID	Conductivity ohms/cm EPA 9050
1352-20-01	52,100
1352-20-02	1,600
1352-20-03	7,900
1352-20-04	33,400
1352-20-05	2,200
1352-20-06	5,100
1352-20-07	69,300
1352-20-08	3,900
1352-20-09	14,700
1352-20-10	46,900
1352-20-11	7,000
1352-20-12	21,700
1352-20-13	52,700
1352-20-14	16,000
1352-20-15	27,400
1352-20-16	21,600
1352-20-17	4,900
1352-20-18	8,300
1352-20-19	64,400
1352-20-20	25,200
1352-20-21	47,300
1352-20-22	69,300
1352-20-23	43,800
1352-20-24	46,800
1352-20-25	55,300
1352-20-26	25,800
1352-20-27	37,200
Blank	ND(2)

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105887

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-01

Analysis No.: G-9010905-001
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	60	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	21	2.0	ND(0.001)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	27	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	3.0	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	5.0	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2,800	100	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.1	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	66	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	10	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	110	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	40	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	0.51	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	47	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	1,400	100	ND(2)	04/25/90	05/01/90	JW	05/08/90

NOTE: Higher detection limits due to sample matrix.

Neal P. Conroy
Reviewed

Lauri Cullen
Approved

Vanadium LBS 3200

PMCOBUS0105888

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-02

Analysis No.: G-9010905-002
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	1.2	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	19	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	26	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.2	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	2.2	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	2.3	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	3.5	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	13	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105889

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-03

Analysis No.: G-9010905-003
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	60	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	7.0	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	57	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	3.0	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	5.0	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1,500	50	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.5	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	30	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	0.13	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	40	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	19	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	1,100	100	ND(2)	04/25/90	05/01/90	JW	05/08/90

NOTE: Higher detection limits due to sample matrix.

Reviewed

Approved

PMCOBUS0105890

Enseco
A Company

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-04

Analysis No.: G-9010905-004
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	6.1	6	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	4.5	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	54	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	380	10	ND(1)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.4	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	10	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	2.1	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	24	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	9.4	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	380	20	ND(2)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105891

PMCOBUS0105891

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-05

Analysis No.: G-9010905-005
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By
METALS Prepared by EPA 3050 By

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	1.3	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	21	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	13	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	2.5	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	3.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	15	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lauri Cullen
Approved

PMCOBUS0105892

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 HILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-06

Analysis No.: G-9010905-006
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	3.0	0.50	ND(0.5)	04/25/90	05/01/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	32	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	110	5.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	3.9	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	2.4	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	2.0	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	4.9	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	110	10	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105893

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-07

Analysis No.: G-9010905-007
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	60	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	12	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	13	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	3.0	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	5.0	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1,800	50	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	45	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	0.15	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	89	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	40	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	0.54	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	24	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	1,800	100	ND(2)	04/25/90	05/01/90	JW	05/08/90

NOTE: Higher detection limits due to sample matrix.

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105894

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A CONTINO Company

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-08

Analysis No.: G-9010905-008
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.0	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	13	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	15	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.3	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	2.4	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	2.7	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	19	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lauri Cullen
Approved

PMCOBUS0105895

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A CORNING COMPANY

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-09

Analysis No.: G-9010905-009
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.4	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	16	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	140	5.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.6	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	5.7	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	2.2	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	8.2	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	4.2	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	150	10	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105896

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-10

Analysis No.: G-9010905-010
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	60	ND(60)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	8.2	1.0	ND(0.001)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	15	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	3.0	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	5.0	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1,300	50	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.5	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	26	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	ND	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	0.14	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	180	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	40	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	10	ND(0.2)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	17	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	1,000	100	ND(2)	04/25/90	05/01/90	JW	05/08/90

NOTE: Higher detection limits due to sample matrix.

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105897

PMCOBUS0105897

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-11

Analysis No.: G-9010905-011
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	1.1	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	12	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	16	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.2	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.8	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	2.1	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	3.4	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	17	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lauri Allen
Approved

PMCOBUS0105898

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-12

Analysis No.: G-9010905-012
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.7	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	15	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	250	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.6	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	5.7	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.4	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	20	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	5.1	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	170	10	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105899

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-13

Analysis No.: G-9010905-013
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 7040)	mg/kg	3	3	ND(3)	04/20/90	04/25/90	JW	04/25/90
Arsenic/TTLC (EPA 7061)	mg/kg	12	1.0	ND(0.001)	04/20/90	04/24/90	JB	04/24/90
Barium/TTLC (EPA 6010)	mg/kg	11	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1,700	3.0	ND(0.06)	04/20/90	04/24/90	JW	04/24/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	0.94	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Copper/TTLC (EPA 6010)	mg/kg	41	2.0	ND(0.2)	04/20/90	04/24/90	JW	04/24/90
Lead/TTLC (EPA 6010)	mg/kg	4.1	2.0	ND(0.2)	04/20/90	04/24/90	JW	04/24/90
Mercury/TTLC (EPA 245.1)	mg/kg	0.12	0.02	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Molybdenum/TTLC (EPA 6010)	mg/kg	270	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Nickel/TTLC (EPA 6010)	mg/kg	3.3	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Selenium/TTLC (EPA 7741)	mg/kg	0.73	0.10	ND(0.1)	04/20/90	04/24/90	JB	04/24/90
Silver/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	1.0	ND(1)	04/20/90	04/23/90	JW	04/23/90
Vanadium/TTLC (EPA 6010)	mg/kg	23	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Zinc/TTLC (EPA 6010)	mg/kg	1,000	3.0	ND(0.06)	04/20/90	04/24/90	JW	04/24/90

NOTE: Higher detection limits due to sample matrix.

Neal P. Conroy
Reviewed

Lauri Allen
Approved

PMCOBUS0105900

PMCOBUS0105900

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-14

Analysis No.: G-9010905-014
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	1.1	1.0	ND(1)	04/20/90	04/25/90	JW	04/25/90
Arsenic/TTLC (EPA 7061)	mg/kg	1.1	0.10	ND(0.001)	04/20/90	04/24/90	JB	04/24/90
Barium/TTLC (EPA 6010)	mg/kg	8.2	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	34	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	0.55	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Copper/TTLC (EPA 6010)	mg/kg	2.0	0.20	ND(0.2)	04/20/90	04/25/90	JW	04/25/90
Lead/TTLC (EPA 6010)	mg/kg	1.8	0.20	ND(0.2)	04/20/90	04/25/90	JW	04/25/90
Mercury/TTLC (EPA 7470)	mg/kg	ND	0.02	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Molybdenum/TTLC (EPA 6010)	mg/kg	6.6	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Nickel/TTLC (EPA 6010)	mg/kg	0.99	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Selenium/TTLC (EPA 7741)	mg/kg	0.11	0.10	ND(0.1)	04/20/90	04/24/90	JB	04/24/90
Silver/TTLC (EPA 6010)	mg/kg	ND	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	1.0	ND(1)	04/20/90	04/23/90	JW	04/23/90
Vanadium/TTLC (EPA 6010)	mg/kg	2.3	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Zinc/TTLC (EPA 6010)	mg/kg	25	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105901

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-15

Analysis No.: G-9010905-015
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	4.8	1.0	ND(1)	04/20/90	04/25/90	JW	04/25/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.8	0.20	ND(0.001)	04/20/90	04/24/90	JB	04/24/90
Barium/TTLC (EPA 6010)	mg/kg	11	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	250	0.50	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	0.52	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Copper/TTLC (EPA 6010)	mg/kg	6.9	0.20	ND(0.2)	04/20/90	04/25/90	JW	04/25/90
Lead/TTLC (EPA 6010)	mg/kg	2.0	0.20	ND(0.2)	04/20/90	04/25/90	JW	04/25/90
Mercury/TTLC (EPA 7471)	mg/kg	0.04	0.02	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Molybdenum/TTLC (EPA 6010)	mg/kg	43	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Nickel/TTLC (EPA 6010)	mg/kg	1.2	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Selenium/TTLC (EPA 7741)	mg/kg	0.22	0.10	ND(0.1)	04/20/90	04/24/90	JB	04/24/90
Silver/TTLC (EPA 6010)	mg/kg	ND	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	1.0	ND(1)	04/20/90	04/23/90	JW	04/23/90
Vanadium/TTLC (EPA 6010)	mg/kg	4.8	0.05	ND(0.05)	04/20/90	04/25/90	JW	04/25/90
Zinc/TTLC (EPA 6010)	mg/kg	240	0.50	ND(0.05)	04/20/90	04/25/90	JW	04/25/90

Neal P. Conroy
Reviewed

Lauri Cullen
Approved

PMCOBUS0105902

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-16

Analysis No.: G-9010905-016
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	3.7	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	19	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	140	5.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	9.9	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.4	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	31	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	9.2	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	120	10	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105903

PMCOBUS0105903

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-17

Analysis No.: G-9010905-017
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.3	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	22	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	190	5.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.4	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.0	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	5.0	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.5	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	5.7	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	150	10	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105904

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-18

Analysis No.: G-9010905-018
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.4	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	18	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	200	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.0	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.0	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	6.0	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.7	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	3.7	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	6.0	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	160	20	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lynn Cullen
Approved

PMCOBUS0105905

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-19

Analysis No.: G-9010905-019
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	4.6	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	5.5	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	260	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.0	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	10	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	100	20	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	10	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	220	20	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lauri Allen
Approved

PMCOBUS0105906

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A CONTINO COMPANY

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-20

Analysis No.: G-9010905-020
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	1.1	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	21	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2.1	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	6.7	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	3.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	6.7	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105907

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A CORNING COMPANY

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-21

Analysis No.: G-9010905-021
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 7040)	mg/kg	ND	1.0	ND(1)	04/25/90	05/07/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.8	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	14	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	100	5.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.3	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.0	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	5.7	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	32	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	7.2	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	79	5.0	ND(1)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Approved

PMCOBUS0105908

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-22

Analysis No.: G-9010905-022
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	8.1	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	9.9	1.0	ND(0.001)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	17	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	550	20	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.3	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	15	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.7	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	130	10	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	17	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	440	20	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Jamie Cullen
Approved

PMCOBUS0105909

PMCOBUS0105909

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-23

Analysis No.: G-9010905-023
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	1.2	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	20	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	3.5	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.2	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.2	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	5.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	9.6	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105910

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-24

Analysis No.: G-9010905-024
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.1	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	17	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	49	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.3	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.1	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	3.1	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.8	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	12	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	5.7	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	80	10	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lanni Cullen
Approved

PMCOBUS0105911

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-25

Analysis No.: G-9010905-025
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	4.1	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	25	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	250	10	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.8	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	9.4	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	41	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	4.1	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	13	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	120	10	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Approved

PMCOBUS0105912

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-26

Analysis No.: G-9010905-026
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.0	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	33	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	4.0	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.9	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	5.1	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	2.2	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	4.5	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	8.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	11	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Jamie Cullen
Approved

PMCOBUS0105913

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-27

Analysis No.: G-9010905-027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.0	ND(6)	04/25/90	05/01/90	JW	05/08/90
Arsenic/TTLC (EPA 7061)	mg/kg	2.5	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Barium/TTLC (EPA 6010)	mg/kg	26	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.30	ND(0.3)	04/25/90	05/01/90	JW	05/08/90
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.50	ND(0.5)	04/25/90	05/01/90	JW	05/08/90
Chromium, Tri/TTLC (EPA 6010)	mg/kg	23	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
Cobalt/TTLC (EPA 6010)	mg/kg	1.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Copper/TTLC (EPA 6010)	mg/kg	3.9	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Lead/TTLC (EPA 6010)	mg/kg	1.1	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.10	ND(0.1)	04/25/90	04/26/90	JW	05/08/90
Molybdenum/TTLC (EPA 6010)	mg/kg	11	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.0	ND(4)	04/25/90	05/01/90	JW	05/08/90
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.50	ND(0.5)	04/25/90	04/27/90	JB	05/08/90
Silver/TTLC (EPA 6010)	mg/kg	ND	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Thallium/TTLC (EPA 7840)	mg/kg	ND	2.5	ND(2.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/TTLC (EPA 6010)	mg/kg	9.6	1.0	ND(1)	04/25/90	05/01/90	JW	05/08/90
Zinc/TTLC (EPA 6010)	mg/kg	21	2.0	ND(2)	04/25/90	05/01/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105914

Enseco

Enseco - CRL
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

August 2, 1990

DHS CERTIFICATE #157

MITTELHAUSER CORP.
23272 MILL CREEK RD., STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Project: (1352-20) PG & E TOPOCK

Enclosed with this letter is the AMENDED report on the chemical and physical analyses on the samples from ANALYSIS NO: G-9010905-001/0027 shown above.

The samples were received by CRL in a chilled state, intact and with the chain-of-custody record attached.

Note that ND() means not detected at the reporting limit expressed within the parentheses. The detection limit is the reporting limit raised to reflect the dilution factor of the sample.

Solid samples are reported on "as received" basis.

Please note the Conductivity's unit has been changed from ohms/cm to umhos/cm.

Please note the cross-reference on the following page.

C. Rhodes
Reviewed

Mark L. King
Approved

PMCOBUS0105915

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

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FAX: (714) 891-5917

Page Two

August 2, 1990

DHS CERTIFICATE #157

MITTELHAUSER CORP.
23272 MILL CREEK RD., STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Project: (1352-20) PG & E TOPOCK

Please note the cross-reference for EPA Method 340.1/.2 analyses is as follows:

Enseco-Ventura Sample ID	Enseco-CRL Sample ID	Client's Sample ID
0110165501	G-9010905-001	1352-20-01
0110165502	G-9010905-002	1352-20-02
0110165503	G-9010905-003	1352-20-03
0110165504	G-9010905-004	1352-20-04
0110165505	G-9010905-005	1352-20-05
0110165506	G-9010905-006	1352-20-06
0110165507	G-9010905-007	1352-20-07
0110165508	G-9010905-008	1352-20-08
0110165509	G-9010905-009	1352-20-09
0110165510	G-9010905-010	1352-20-10
0110165511	G-9010905-011	1352-20-11
0110165512	G-9010905-012	1352-20-12
0110165513	G-9010905-013	1352-20-13
0110165514	G-9010905-014	1352-20-14
0110165515	G-9010905-015	1352-20-15
0110165516	G-9010905-016	1352-20-16
0110165517	G-9010905-017	1352-20-17
0110165518	G-9010905-018	1352-20-18
0110165519	G-9010905-019	1352-20-19
0110165520	G-9010905-020	1352-20-20
0110165521	G-9010905-021	1352-20-21
0110165522	G-9010905-022	1352-20-22
0110165523	G-9010905-023	1352-20-23
0110165524	G-9010905-024	1352-20-24
0110165525	G-9010905-025	1352-20-25
0110165526	G-9010905-026	1352-20-26
0110165527	G-9010905-027	1352-20-27

C. Rhodes
Reviewed

Mark L. King
Approved

PMCOBUS0105916

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-01

Analysis No.: G-9010905-001
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.1	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	6,500	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	12.0	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	7.55	NA	NA	04/24/90	04/24/90	IM	05/07/90
pH/STLC-DI (EPA 9045)	units	7.68	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	52,100	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

Approved

PMCOBUS0105917

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-02

Analysis No.: G-9010905-002
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.2	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	90	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	4.8	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.94	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.97	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	1,600	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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PMCOBUS0105918

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-03

Analysis No.: G-9010905-003
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.5	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	790	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	4.9	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.00	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.90	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	7,900	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

Approved

PMCOBUS0105919

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-04

Analysis No.: G-9010905-004
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	3,400	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	6.7	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.01	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.67	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	33,400	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

C. Rhodes
Reviewed

Approved

PMCOBUS0105920

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-05

Analysis No.: G-9010905-005
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	180	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	2.6	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.99	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.69	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	2,200	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

Approved

PMCOBUS0105921

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-06

Analysis No.: G-9010905-006
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	340	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	4.7	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.64	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.76	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	5,100	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

Approved

PMCOBUS0105922

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-07

Analysis No.: G-9010905-007
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	11,000	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	9.0	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	7.81	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.45	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	69,300	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

Approved

PMCOBUS0105923

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-08

Analysis No.: G-9010905-008
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.3	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	260	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	1.9	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.80	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.66	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	3,900	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

C. Rhodigan
Reviewed

Approved

PMCOBUS0105924

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-09

Analysis No.: G-9010905-009
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By
STLC Prepared by WET PREP By

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.6	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	2,030	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	2.1	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.23	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.74	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	14,700	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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PMCOBUS0105925

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-10

Analysis No.: G-9010905-010
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By
STLC Prepared by WET PREP By

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.04	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.5	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	7,800	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	6.5	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	7.86	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.50	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	46,900	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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PMCOBUS0105926

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-11

Analysis No.: G-9010905-011
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.2	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	490	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	1.2	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.60	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.47	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	7,000	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-12

Analysis No.: G-9010905-012
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.03	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.6	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	4,030	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	3.2	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.02	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.73	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	21,700	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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PMCOBUS0105928

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-13

Analysis No.: G-9010905-013
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	8,800	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	5.7	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	7.60	NA	NA	04/30/90	04/30/90	IM	04/30/90
pH/STLC-DI (EPA 9045)	units	7.49	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	52,700	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-14

Analysis No.: G-9010905-014
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By
STLC Prepared by WET PREP By

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	1,600	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	0.66	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.04	NA	NA	04/30/90	04/30/90	IM	04/30/90
pH/STLC-DI (EPA 9045)	units	8.23	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	16,000	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-15

Analysis No.: G-9010905-015
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	4,400	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	1.9	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	7.62		NA	04/30/90	04/30/90	IM	04/30/90
pH/STLC-DI (EPA 9045)	units	7.78	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	27,400	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-16

Analysis No.: G-9010905-016
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	5,010	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	9.1	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.20	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.20	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	21,600	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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A Company

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-17

Analysis No.: G-9010905-017
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.04	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.4	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	1,200	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	1.6	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	7.79	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.52	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	4,900	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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PMCOBUS0105933

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A CORNING Company

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-18

Analysis No.: G-9010905-018
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.03	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	1.0	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	1,600	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	2.5	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	7.90	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.91	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	8,300	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-19

Analysis No.: G-9010905-019
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	11,000	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	7.5	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.01	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.60	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	64,400	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-20

Analysis No.: G-9010905-020
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	2,100	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	1.7	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.40	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.41	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	25,200	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-21

Analysis No.: G-9010905-021
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.3	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	7,000	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	4.5	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.09	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.82	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	47,300	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-22

Analysis No.: G-9010905-022
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	8,400	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	8.3	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	7.99	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.83	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	69,300	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-23

Analysis No.: G-9010905-023
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.17	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	5,600	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	1.1	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.44	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.43	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	43,800	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

Approved

PMCOBUS0105939

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-24

Analysis No.: G-9010905-024
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	0.3	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	4,700	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	3.4	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.23	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.03	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	46,800	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

Approved

PMCOBUS0105940

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 HILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-25

Analysis No.: G-9010905-025
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	7,500	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	5.8	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.03	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	7.58	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	55,300	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-26

Analysis No.: G-9010905-026
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.17	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	2,000	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	2.0	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.56	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	9.18	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	25,800	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

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PMCOBUS0105942

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-27

Analysis No.: G-9010905-027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.06	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND(0.2)	05/04/90	05/04/90	EB	05/07/90
TDS/STLC-DI (EPA 160.1)	mg/L	3,600	10	ND(10)	04/27/90	04/27/90	EB	05/01/90
Fluoride, STLC (DI H2O EXT) (EPA 340.2)	mg/L	3.9	0.1	ND(0.1)	05/02/90	05/02/90	JR	05/02/90
pH (EPA 9045)	units	8.31	NA	NA	04/24/90	04/24/90	IM	04/24/90
pH/STLC-DI (EPA 9045)	units	8.23	NA	NA	05/03/90	05/03/90	EB	05/07/90
Conductivity (EPA 9050)	umhos/cm	37,200	2	ND(2)	04/30/90	04/30/90	IM	04/30/90

Reviewed

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PMCOBUS0105943

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

Matrix Spike/Matrix Spike Duplicate Report

Sample Number	Parameter (Method)	Units	Observed Concentration Sample	MS	MSD	Amt. Spiked	% Recovery MS	MSD	Avg.	% RPD
M90122020	FLUORIDE (EPA 340.2)	mg/L	0.89	6.26	5.84	5.00	107	99	103	8
M90122021	FLUORIDE (EPA 340.2)	mg/L	.89	5.79	5.96	5	98	101	100	3
9010905-021	CHROMIUM, HEX/TTLC (EPA 7196)	mg/kg	0	59.5	56.8	50	119	114	116	5
9010905-014	CHROMIUM, HEX/TTLC (EPA 7196)	mg/kg	0	54.2	55.4	50	108	111	110	2
9010905-014	CHROMIUM, HEXAVALENT/ STLC (EPA 7196)	mg/L	0	61.1	58.6	50	122	117	120	4
9011606-002	CHROMIUM, HEXAVALENT/ STLC (EPA 7196)	mg/L	0	58.7	57.4	50	117	115	116	2

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DHS CERTIFICATE #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
9010905-014	4-MAY-1990	CHROMIUM, HEX/TTLC (EPA 7196)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
		CHROMIUM, HEXAVALENT/STLC (EPA 7196)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
9010905-021	4-MAY-1990	CHROMIUM, HEX/TTLC (EPA 7196)	G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
9011606-002	3-MAY-1990	CHROMIUM, HEXAVALENT/STLC (EPA 7196)	G-9010905-021
			G-9010905-022

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DHS CERTIFICATE #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
M90122020	2-MAY-1990	FLUORIDE (EPA 340.2)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
M90122021	2-MAY-1990	FLUORIDE (EPA 340.2)	G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		VANADIUM (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		ZINC (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022

Neal P. Conroy
Reviewed

Lannie Allen
Approved

PMCOBUS0105947

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

Laboratory Control Sample Report

QC Batch	Parameter (Method)	Amt. Spiked	Units	Avg. Spike Recov.	Acceptable Range	Rel. Pct. Diff.	Acceptable Range
L90121003	TDS/STLC-DI (EPA 160.1)	980	mg/L	100.	70-120	3.	30
L90122020	FLUORIDE (EPA 340.2)	2.00	mg/L	99.	87-120	1.	15
L90122021	FLUORIDE (EPA 340.2)	5	mg/L	102.	87-120	0.	15
L90124041	CHROMIUM, HEX/TTLC (EPA 7196)	50	mg/kg	114.	60-130	0.	40
L90124040	CHROMIUM, HEX/TTLC (EPA 7196)	50	mg/kg	107.	60-130	2.	40
L90123016	CHROMIUM, HEXAVALENT/ STLC (EPA 7196)	50	mg/L	108.	60-130	2.	40
L90123017	CHROMIUM, HEXAVALENT/ STLC (EPA 7196)	50	mg/L	120.	60-130	0.	40

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A CORNING Company

DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
L90121003	27-APR-1990	TDS/STLC-DI (EPA 160.1)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
L90122020	2-MAY-1990	FLUORIDE (EPA 340.2)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
L90122021	2-MAY-1990	FLUORIDE (EPA 340.2)	G-9010905-021
			G-9010905-022

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
L90123016	3-MAY-1990	CHROMIUM, HEXAVALENT/STLC (EPA 7196)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
L90123017	3-MAY-1990	CHROMIUM, HEXAVALENT/STLC (EPA 7196)	G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
L90124040	4-MAY-1990	CHROMIUM, HEX/TTLC (EPA 7196)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016

Reviewed

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PMCOBUS0105950

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
L90124041	4-MAY-1990	CHROMIUM, HEX/TTLC (EPA 7196)	G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027

Reviewed

Approved

PMCOBUS0105951

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-01

Analysis No.: G-9010905-001
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	1.1	0.1	ND(0.001)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	4.8	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	63	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	5.8	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	12	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	5.5	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	74	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Jamie Cullen
Approved

PMCOBUS0105952

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-02

Analysis No.: G-9010905-002
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.05	0.005	ND(0.005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.3	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	1.4	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Jamie Cullen
Approved

J

PMCOBUS0105953

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-03

Analysis No.: G-9010905-003
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.24	0.03	ND(0.001)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	5.3	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	25	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	2.1	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	1.9	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	0.74	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	75	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105954

PMCOBUS0105954

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-04

Analysis No.: G-9010905-004
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By
METALS Prepared by EPA 3050 By

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.22	0.02	ND(0)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	4.1	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	13	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	0.83	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	5.1	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	0.74	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	30	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Jamie Allen
Approved

PMCOBUS0105955

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-05

Analysis No.: G-9010905-005
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.02	0.005	ND(0.005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	1.8	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	0.55	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	1.1	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105956

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-06

Analysis No.: G-9010905-006
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.06	0.005	ND(0.005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.9	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	3.0	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	7.2	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105957

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-07

Analysis No.: G-9010905-007
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	.5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.63	0.05	ND(0.0005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	0.64	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	54	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	3.9	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	5.3	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	0.02	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	2.5	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	120	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Jamie Allen
Approved

PMCOBUS0105958

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-08

Analysis No.: G-9010905-008
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.04	0.005	ND(0.005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	1.7	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	1.0	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	2.1	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lauri Allen
Approved

PMCOBUS0105959

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-09

Analysis No.: G-9010905-009
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.10	0.01	ND(0)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.2	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	6.8	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	13	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lauri Allen
Approved

PMCOBUS0105960

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A CORNING COMPANY

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-10

Analysis No.: G-9010905-010
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.58	0.05	ND(0.0005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	62	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.04	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	3.1	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	8.5	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	0.02	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	2.2	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	94	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105961

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-11

Analysis No.: G-9010905-011
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.03	0.005	ND(0.005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	1.3	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	0.72	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 7421)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P Conroy
Reviewed

Jamie Cullen
Approved

PMCOBUS0105962

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-12

Analysis No.: G-9010905-012
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.25	0.03	ND(0.001)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	1.8	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	22	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.03	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	1.1	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	5.6	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	0.64	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	28	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Miller
Approved

PMCOBUS0105963

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-13

Analysis No.: G-9010905-013
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 7040)	mg/L	ND	1.0	ND(1)	04/20/90	04/25/90	JW	04/25/90
Arsenic/STLC (EPA 7061)	mg/L	0.95	0.10	ND(0.0005)	04/20/90	04/24/90	JW	04/24/90
Barium/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	90	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Copper/STLC (EPA 6010)	mg/L	2.6	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Lead/STLC (EPA 7421)	mg/L	ND	0.50	ND(0.05)	04/20/90	04/24/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/20/90	04/24/90	JW	04/24/90
Molybdenum/STLC (EPA 6010)	mg/L	7.2	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Nickel/STLC (EPA 6010)	mg/L	0.21	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Selenium/STLC (EPA 7741)	mg/L	0.02	0.01	ND(0.01)	04/20/90	04/24/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.3	ND(0.3)	04/20/90	04/23/90	JW	04/23/90
Vanadium/STLC (EPA 6010)	mg/L	2.6	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Zinc/STLC (EPA 6010)	mg/L	95	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105964

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-14

Analysis No.: G-9010905-014
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/20/90	04/24/90	JW	04/24/90
Arsenic/STLC (EPA 7061	mg/L	0.07	0.01	ND(0)	04/20/90	04/24/90	JW	04/24/90
Barium/STLC (EPA 6010)	mg/L	0.93	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	4.6	0.2	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Lead/STLC (EPA 7421)	mg/L	ND	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/20/90	04/24/90	JW	04/24/90
Molybdenum/STLC (EPA 6010)	mg/L	1.6	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/20/90	04/24/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.3	ND(0.3)	04/20/90	04/23/90	JW	04/23/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Zinc/STLC (EPA 6010)	mg/L	4.7	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105965

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-15

Analysis No.: G-9010905-015
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/20/90	04/24/90	JW	04/24/90
Arsenic/STLC (EPA 7061)	mg/L	0.22	0.02	ND(0)	04/20/90	04/24/90	JW	04/24/90
Barium/STLC (EPA 6010)	mg/L	1.3	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	19	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Copper/STLC (EPA 6010)	mg/L	1.0	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Lead/STLC (EPA 7421)	mg/L	ND	0.50	ND(0.05)	04/20/90	04/24/90	JW	04/24/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/20/90	04/24/90	JW	04/24/90
Molybdenum/STLC (EPA 6010)	mg/L	6.1	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/20/90	04/24/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.3	ND(0.3)	04/20/90	04/23/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	0.52	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90
Zinc/STLC (EPA 6010)	mg/L	31	0.20	ND(0.02)	04/20/90	04/24/90	JW	04/24/90

Neal P. Conroy
Reviewed

Jennifer Allen
Approved

PMCOBUS0105966

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-16

Analysis No.: G-9010905-016
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.27	0.03	ND(0.001)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.2	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	7.5	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	0.87	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	4.8	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	10	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Lauri Allen
Approved

PMCOBUS0105967

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-17

Analysis No.: G-9010905-017
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.09	0.01	ND(0)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.2	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	6.9	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.04	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	12	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105968

Enseco
A Corning Company

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-18

Analysis No.: G-9010905-018
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.09	0.01	ND(0)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.1	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	7	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.03	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	13	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105969

Enseco
A Corning Company

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-19

Analysis No.: G-9010905-019
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.40	0.05	ND(0.0005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	13	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	11	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	0.94	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	16	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105970

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-20

Analysis No.: G-9010905-020
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.03	0.005	ND(0.005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	1.7	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	0.81	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Tammi Miller
Approved

PMCOBUS0105971

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-21

Analysis No.: G-9010905-021
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 7041)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.16	0.02	ND(0.001)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	1.6	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	4.7	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	4.6	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	4.3	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Yanni Cullen
Approved

PMCOBUS0105972

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-22

Analysis No.: G-9010905-022
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.40	0.05	ND(0.0005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	3.4	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	9.3	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	5.5	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	0.74	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Approved

PMCOBUS0105973

Enseco

DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-23

Analysis No.: G-9010905-023
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.03	0.005	ND(0.005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	1.5	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.17	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Reviewed

Approved

PMCOBUS0105974

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-24

Analysis No.: G-9010905-024
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.10	0.01	ND(0)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	1.9	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	2.7	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(1)	04/25/90	05/04/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	0.81	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	4.9	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105975

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-25

Analysis No.: G-9010905-025
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.29	0.03	ND(0.001)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.7	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	12	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	ND	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(1)	04/25/90	05/04/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	4.4	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	0.65	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	8.6	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Laurie Allen
Approved

PMCOBUS0105976

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-26

Analysis No.: G-9010905-026
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.06	0.005	ND(0.005)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.2	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.17	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(1)	04/25/90	05/04/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

Neal P. Conroy
Reviewed

Tami Allen
Approved

PMCOBUS0105977

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK
Sample ID: 1352-20-27

Analysis No.: G-9010905-027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

MERCURY Prepared by HG PREP By: NL
METALS Prepared by EPA 3050 By: NL

Parameter	Units	Result	Det. Limit	Blank (RL)	Date Prepared	Date Analyzed	By	Date Reported
Antimony/STLC (EPA 6010)	mg/L	ND	5.0	ND(0.5)	04/25/90	05/02/90	JW	05/08/90
Arsenic/STLC (EPA 7061)	mg/L	0.13	0.01	ND(0)	04/25/90	05/01/90	JB	05/08/90
Barium/STLC (EPA 6010)	mg/L	2.6	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Beryllium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Cadmium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Trivalent/STLC (EPA 6010)	mg/L	2	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Chromium, Hexavalent/STLC (EPA 7196)	mg/L	0.06	0.02	ND(0.02)	05/03/90	05/03/90	EB	05/04/90
Cobalt/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Copper/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Lead/STLC (EPA 6010)	mg/L	ND	1.0	ND(1)	04/25/90	05/04/90	JW	05/08/90
Mercury/STLC (EPA 7471)	mg/L	ND	0.005	ND(0.005)	04/25/90	05/02/90	JW	05/08/90
Molybdenum/STLC (EPA 6010)	mg/L	2	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Nickel/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/02/90	JW	05/08/90
Selenium/STLC (EPA 7741)	mg/L	ND	0.01	ND(0.01)	04/25/90	05/01/90	JB	05/08/90
Silver/STLC (EPA 6010)	mg/L	ND	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90
Thallium/STLC (EPA 7840)	mg/L	ND	0.5	ND(0.5)	04/25/90	05/07/90	JW	05/08/90
Vanadium/STLC (EPA 6010)	mg/L	ND	0.50	ND(0.05)	04/25/90	05/04/90	JW	05/08/90
Zinc/STLC (EPA 6010)	mg/L	1.3	1.0	ND(0.1)	04/25/90	05/02/90	JW	05/08/90

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DHS CERTIFICATE #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

Laboratory Control Sample Report

QC Batch	Parameter (Method)	Amt. Spiked	Units	Avg. Spike Recov.	Acceptable Range	Rel. Pct. Diff.	Acceptable Range
L90121003	TDS/STLC-DI (EPA 160.1)	980	mg/L	100.	70-120	3.	30
L90128007	VANADIUM (EPA 200.7)	2.0	mg/L	114.	69-123	2.	20
L90116020	ANTIMONY (EPA 204.1)	2	mg/L	80.	60-130	13.	40
L90116005	ARSENIC (EPA 206.3)	2	mg/L	85.	78-120	6.	20
L90127010	ARSENIC (EPA 206.3)	2.00	mg/L	103.	78-120	5.	20
L90124019	ARSENIC (EPA 206.3)	2.00	mg/L	94.	78-120	3.	20
L90116005	ARSENIC (EPA 206.3)	2	mg/L	85.	78-120	6.	20
L90127024	MERCURY (EPA 245.1)	0.0020	mg/L	110.	51-130	0.	29
L90124019	SELENIUM (EPA 270.3)	2.00	mg/L	101.	55-128	3.	27
L90116005	SELENIUM (EPA 270.3)	2	mg/L	88.	55-128	2.	27
L90124022	SELENIUM (EPA 270.3)	2.00	mg/L	94.	55-128	3.	27
L90127026	THALLIUM (EPA 279.1)	2	mg/L	93.	56-126	5.	26
L90122020	FLUORIDE (EPA 340.2)	2.00	mg/L	99.	87-120	1.	15
L90116044	ANTIMONY (EPA 6010)	50	mg/kg	82.	60-125	5.	25
L90122008	ANTIMONY (EPA 6010)	50	mg/kg	88.	60-125	4.	25
L90116022	BARIUM (EPA 6010)	200	mg/kg	89.	65-125	8.	30
L90116044	BARIUM (EPA 6010)	200	mg/kg	88.	65-125	3.	30
L90122008	BARIUM (EPA 6010)	200	mg/kg	95.	65-125	1.	30
L90122008	BERYLLIUM (EPA 6010)	5	mg/kg	93.	60-126	1.	30
L90116022	BERYLLIUM (EPA 6010)	5	mg/kg	83.	60-126	6.	30
L90122008	CADMIUM (EPA 6010)	5	mg/kg	97.	63-126	2.	25
L90116022	CADMIUM (EPA 6010)	5	mg/kg	89.	63-126	6.	25
L90122008	CHROMIUM (EPA 6010)	20	mg/kg	100.	63-126	4.	30
L90128011	CHROMIUM (EPA 6010)	20	mg/kg	110.	63-126	11.	30
L90116022	CHROMIUM (EPA 6010)	20	mg/kg	101.	63-126	6.	30
L90122008	COBALT (EPA 6010)	50	mg/kg	98.	63-126	1.	35
L90116022	COBALT (EPA 6010)	50	mg/kg	90.	63-126	6.	35
L90122008	COPPER (EPA 6010)	25	mg/kg	96.	62-126	3.	30
L90116022	COPPER (EPA 6010)	25	mg/kg	98.	62-126	3.	30
L90122008	LEAD (EPA 6010)	50	mg/kg	97.	61-126	0.	30
L90116022	LEAD (EPA 6010)	50	mg/kg	92.	61-126	0.	30
L90122008	MOLYBDENUM (EPA 6010)	25	mg/kg	96.	61-126	3.	32
L90116022	MOLYBDENUM (EPA 6010)	25	mg/kg	91.	61-126	8.	32
L90122008	NICKEL (EPA 6010)	50	mg/kg	98.	61-126	1.	25
L90116022	NICKEL (EPA 6010)	50	mg/kg	91.	61-126	4.	25
L90122008	SILVER (EPA 6010)	5	mg/kg	92.	60-126	1.	30
L90122008	VANADIUM (EPA 6010)	50	mg/kg	100.	60-126	5.	25
L90116022	VANADIUM (EPA 6010)	50	mg/kg	98.	60-126	6.	25
L90128011	ZINC (EPA 6010)	50	mg/kg	103.	60-126	5.	30
L90122008	ZINC (EPA 6010)	50	mg/kg	96.	60-126	2.	30
L90116022	ZINC (EPA 6010)	50	mg/kg	98.	60-126	0.	30

Neal P. Conroy
Reviewed

Laurie Cullen
Approved

PMCOBUS0105979

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVID DORN
Project: (1352-20) PG & E TOPOCK

Analysis No.: G-9010905-001/027
Date Sampled: 17-APR-1990
Date Sample Rec'd: 18-APR-1990
Sample Type: SOLID

Laboratory Control Sample Report

QC Batch	Parameter (Method)	Amt. Spiked	Units	Avg. Spike Recov.	Acceptable Range	Rel. Pct. Diff.	Acceptable Range
L90120054	ARSENIC (EPA 7061)	5	mg/kg	78.	50-127	7.	25
L90124040	CHROMIUM, HEX/TTLC (EPA 7196)	50	mg/kg	107.	60-130	2.	40
L90123016	CHROMIUM, HEXAVALENT/ STLC (EPA 7196)	50	mg/L	108.	60-130	2.	40
L90127030	MERCURY (EPA 7471)	0.175	mg/kg	101.	51-125	2.	42
L90120054	SELENIUM (EPA 7741)	1.25	mg/kg	62.	45-128	8.	40
L90120020	SELENIUM (EPA 7741)	1.25	mg/kg	74.	45-128	9.	40
L90127028	THALLIUM (EPA 7840)	5.0	mg/kg	67.	44-127	9.	39
L90114023	THALLIUM (EPA 7840)	5.	mg/kg	70.	44-127	0.	39

Neal P. Conroy
Reviewed

Lauri Cullen
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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
L90114023	23-APR-1990	THALLIUM (EPA 7840)	G-9010905-013
			G-9010905-014
			G-9010905-015
L90116005	24-APR-1990	ARSENIC (EPA 206.3)	G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-013
			G-9010905-014
			G-9010905-015
		SELENIUM (EPA 270.3)	G-9010905-013
			G-9010905-014
			G-9010905-015
L90116020	25-APR-1990	ANTIMONY (EPA 204.1)	G-9010905-013
L90116022	24-APR-1990	BARIUM (EPA 6010)	G-9010905-013
		BERYLLIUM (EPA 6010)	G-9010905-013
		CADMIUM (EPA 6010)	G-9010905-013
		CHROMIUM (EPA 6010)	G-9010905-013
		COBALT (EPA 6010)	G-9010905-013
		COPPER (EPA 6010)	G-9010905-013
		LEAD (EPA 6010)	G-9010905-013
		MOLYBDENUM (EPA 6010)	G-9010905-013
		NICKEL (EPA 6010)	G-9010905-013
		VANADIUM (EPA 6010)	G-9010905-013
		ZINC (EPA 6010)	G-9010905-013
L90116044	25-APR-1990	ANTIMONY (EPA 6010)	G-9010905-014
			G-9010905-015
		BARIUM (EPA 6010)	G-9010905-014
			G-9010905-015
L90120019	24-APR-1990	ARSENIC (EPA 7061)	G-9010905-013
			G-9010905-014
			G-9010905-015
L90120020	24-APR-1990	SELENIUM (EPA 7741)	G-9010905-013
			G-9010905-014
			G-9010905-015
L90120054	27-APR-1990	ARSENIC (EPA 7061)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		SELENIUM (EPA 7741)	G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
L90121003	27-APR-1990	TDS/STLC-DI (EPA 160.1)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-027
L90122008	1-MAY-1990	ANTIMONY (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		BARIUM (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		BERYLLIUM (EPA 6010)	G-9010905-001
			G-9010905-002

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		CADMIUM (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		CHROMIUM (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-005
			G-9010905-006

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		COBALT (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		COPPER (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		LEAD (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		MOLYBDENUM (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		NICKEL (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
		SILVER (EPA 6010)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-005
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-5

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.01	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.025	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
L90122020	2-MAY-1990	FLUORIDE (EPA 340.2)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
L90123016	3-MAY-1990	CHROMIUM, HEXAVALENT/STLC (EPA 7196)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
L90124019	1-MAY-1990	ARSENIC (EPA 206.3)	G-9010905-001
			G-9010905-002
			G-9010905-003

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
		SELENIUM (EPA 270.3)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
L90124022	1-MAY-1990	SELENIUM (EPA 270.3)	G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
L90124040	4-MAY-1990	CHROMIUM, HEX/TILC (EPA 7196)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-013
			G-9010905-014
			G-9010905-015
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
L90127010	4-MAY-1990	ARSENIC (EPA 206.3)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
L90127024	2-MAY-1990	MERCURY (EPA 245.1)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020

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DHS CERTIFICATE #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-021
			G-9010905-022
			G-9010905-023
L90127026	7-MAY-1990	THALLIUM (EPA 279.1)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-027
L90127028	7-MAY-1990	THALLIUM (EPA 7840)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
L90127030	26-APR-1990	MERCURY (EPA 7471)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
L90128007	4-MAY-1990	VANADIUM (EPA 200.7)	G-9010905-001
			G-9010905-002
			G-9010905-003
			G-9010905-004
			G-9010905-005
			G-9010905-006
			G-9010905-007
			G-9010905-008
			G-9010905-009
			G-9010905-010
			G-9010905-011
			G-9010905-012
			G-9010905-016
			G-9010905-017
			G-9010905-018
			G-9010905-019
			G-9010905-020
			G-9010905-021
			G-9010905-022
			G-9010905-023
			G-9010905-024
			G-9010905-025
			G-9010905-026
			G-9010905-027
L90128011	2-MAY-1990	CHROMIUM (EPA 6010)	G-9010905-004
		ZINC (EPA 6010)	G-9010905-004

Neal P. Conroy
Reviewed

Lonni Cullen
Approved

PMCOBUS0105993

Enseco

Enseco - CRL
2810 Bunsen Avenue, Unit A • Ventura, CA 93003
(805) 650-0546 • FAX: (805) 650-0756

CRL-Garden Grove
7440 Lincoln Way
Garden Grove, CA 92641

05/11/90

Attn: Technical Services
714/897/2125

Project: Mittlehauser 1352-20
P G & E Topock

Sample #: 0110165501
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-001) 1352-20-01

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Fluoride, Total	EPA 340.1/.2	8000	mg/kg	50

Sample #: 0110165502
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-002) 1352-20-02

Fluoride, Total	EPA 340.1/.2	700	mg/kg	50

Sample #: 0110165503
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-003) 1352-20-03

Fluoride, Total	EPA 340.1/.2	2000	mg/kg	50

Sample #: 0110165504
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-004) 1352-20-04

Fluoride, Total	EPA 340.1/.2	2700	mg/kg	50

PMCOBUS0105994

 [ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 01101655

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited

Enseco

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(805) 650-0546 • FAX: (805) 650-0756

Sample #: 0110165505
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-005) 1352-20-05

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Fluoride, Total	EPA 340.1/.2	570	mg/kg	50

Sample #: 0110165506
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-006) 1352-20-06

Fluoride, Total	EPA 340.1/.2	580	mg/kg	50

Sample #: 0110165507
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-007) 1352-20-07

Fluoride, Total	EPA 340.1/.2	6000	mg/kg	50

Sample #: 0110165508
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-008) 1352-20-08

Fluoride, Total	EPA 340.1/.2	1200	mg/kg	50

PMCOBUS0105995

 [ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 01101655

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(805) 650-0546 • FAX: (805) 650-0756

Sample #: 0110165509
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-009) 1352-20-09

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Fluoride, Total	EPA 340.1/.2	950	mg/kg	50

Sample #: 0110165510
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-010) 1352-20-10

Fluoride, Total	EPA 340.1/.2	3900	mg/kg	50

Sample #: 0110165511
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-011) 1352-20-11

Fluoride, Total	EPA 340.1/.2	1000	mg/kg	50

Sample #: 0110165512
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-012) 1352-20-12

Fluoride, Total	EPA 340.1/.2	1300	mg/kg	50

PMCOBUS0105996

 ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit 01101655

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Enseco

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(805) 650-0546 • FAX: (805) 650-0756

Sample #: 0110165513 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-013) 1352-20-13

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Fluoride, Total	EPA 340.1/.2	3900	mg/kg	50

Sample #: 0110165514 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-014) 1352-20-14

Fluoride, Total	EPA 340.1/.2	1200	mg/kg	50

Sample #: 0110165515 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-015) 1352-20-15

Fluoride, Total	EPA 340.1/.2	1000	mg/kg	50

Sample #: 0110165516 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-016) 1352-20-16

Fluoride, Total	EPA 340.1/.2	1500	mg/kg	50

PMCOBUS0105997

 (ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit) 01101655

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Enseco

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Sample #: 0110165517 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-017) 1352-20-17

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Fluoride, Total	EPA 340.1/.2	600	mg/kg	50

Sample #: 0110165518 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-018) 1352-20-18

Fluoride, Total	EPA 340.1/.2	910	mg/kg	50

Sample #: 0110165519 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-019) 1352-20-19

Fluoride, Total	EPA 340.1/.2	2600	mg/kg	50

Sample #: 0110165520 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-020) 1352-20-20

Fluoride, Total	EPA 340.1/.2	380	mg/kg	50

PMCOBUS0105998

 [ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 01101655*

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2810 Bunsen Avenue, Unit A • Ventura, CA 93003
(805) 650-0546 • FAX: (805) 650-0756

Sample #: 0110165521 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-021) 1352-20-21

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Fluoride, Total	EPA 340.1/.2	880	mg/kg	50

Sample #: 0110165522 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-022) 1352-20-22

Fluoride, Total	EPA 340.1/.2	3700	mg/kg	50

Sample #: 0110165523 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-023) 1352-20-23

Fluoride, Total	EPA 340.1/.2	680	mg/kg	50

Sample #: 0110165524 Collector: Client
Received: 04/20/90 Sampling Date & Time: 04/17/90, ****
Type: Soil Method: Not Specified

I.D.: (G-9010905-024) 1352-20-24

Fluoride, Total	EPA 340.1/.2	680	mg/kg	50

PMCOBUS0105999

 ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 01101655

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(805) 650-0546 • FAX: (805) 650-0756

Sample #: 0110165525
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-025) 1352-20-25

CONSTITUENT	METHOD	RESULT	UNIT	MDL
Fluoride, Total	EPA 340.1/.2	2000	mg/kg	50

Sample #: 0110165526
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-026) 1352-20-26

Fluoride, Total	EPA 340.1/.2	540	mg/kg	50

Sample #: 0110165527
Received: 04/20/90
Type: Soil

Collector: Client
Sampling Date & Time: 04/17/90, ****
Method: Not Specified

I.D.: (G-9010905-027) 1352-20-27

Fluoride, Total	EPA 340.1/.2	600	mg/kg	50

Reviewed

Approved

PMCOBUS0106000

ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 01101655•

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Enseco - CRL
2810 Bunsen Avenue, Unit A • Ventura, CA 93003
(805) 650-0546 • FAX: (805) 650-0756

LABORATORY CONTROL SAMPLE REPORT

Client: CRL-Garden Grove
Project: Mittlehauser 1352-20
P G & E Topock

QA/QC Summary

Analysis #: 0110165501-12

Date	Parameter	(Method)	Average Spike Recovery	Acceptable Range	Relative Percent Difference	Acceptable Range
05/03	Flouride, Total	(EPA 340.1/.2)	123	(61-133)	4	(0-20)

Analysis #: 0110165513-15

04/24	Flouride, Total	(EPA 340.1/.2)	102	(61-133)	1	(0-33)

Analysis #: 0110105517-27

05/10	Flouride, Total	(EPA 340.1/.2)	130	(61-133)	14	(0-20)

PMCOBUS0106001

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Enseco

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☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442 8400
☐ Mobile Labs, (800) ENSECO #

CHAIN OF CUSTODY RECORD

Date 4-19-90 Page 1 of 3

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME
MITTELHAUSER # 1352-20 / PG & E TCPCCK

CONTRACT / PURCHASE ORDER / QUOTE #
G-9010905 /

PROJECT MANAGER
KEVIN DODS

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2 *)							Sample Condition/ REMARKS
(G-9010905-001) 1352-20-01	4/17					✓	1	✓							
002 02															
003 03															
004 04															
005 05															
006 06															
007 07															
008 08															
009 09															
010 10															

SAMPLERS: (Signature)

Received by: (Signature) | Date | Time

Relinquished by: (Signature)

Received by: (Signature) | Date | Time

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Relinquished by: (Signature) | Date | Time

Received for Laboratory by: R. Phelan

Date RECEIVED	Time	Date ACCEPTED	Time
4-20-90	9:30		

Method of Shipment:

Special Instructions:
* ACID DISTILLATION AND SELECTIVE ION ELECTRODE
ANALYSIS OF DISTILLATE. RUSH ON #'s 13, 14, & 15 ONLY

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106002

PMCOBUS0106002

Enseco

2557440 Lincoln Way, Garden Grove, CA 92641, (714) 895 6370
[] 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
[] 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
[] 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442 8400
[] Mobile Labs, (800) ENSECO 8

CHAIN OF CUSTODY RECORD

Date. 4-19-90 Page 2 of 3

Lab Number

CLIENT Enseco/CRL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification		Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (390.2)							Sample Condition/ REMARKS
(G-9010905-01)	1352-20-11	4/17					✓	1	✓							
012	12															
013	13															RUSH 5 day
014	14															RUSH as
015	15															RUSH per
016	16															Analyst
017	17															Eric Ngo
018	18															
019	19															
020	20															

SAMPLERS: (Signature)

Relinquished by: (Signature)

Received by: (Signature) — Date — Time

Received by: (Signature) — Date — Time

Relinquished by: (Signature) — Date — Time

Received for Laboratory by: R. Phelan

Date RECEIVED 4-20-90 Time 9:30

Date ACCEPTED Time

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Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

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PMCOBUS0106003

PMCOBUS0106003

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☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442 8400
☐ Mobile Labs, (800) ENSECO 8

CHAIN OF CUSTODY RECORD

Date: 4-19-90 Page 3 of 3

Lab Number

CLIENT: ENSECO / CRL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES: F (300.2)

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (300.2)							Sample Condition/ REMARKS
(G-9410905-021) 1352-20-21	4/17					✓	1	✓							
022 22															
023 23															
024 24															
025 25															
026 26															
027 27															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time	The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.
Relinquished by: (Signature)	Received by: (Signature)	Date	Time	

Relinquished by: (Signature)	Date	Time	Received for Laboratory by:	Date RECEIVED	Time	Date ACCEPTED	Time
			R. Phelan	4-20-90	9:30		

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

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PMCOBUS0106004

PMCOBUS0106004

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1352-20

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONARD - Eric Conard

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 49	4B, 4C	5B, 5D	7	8	10		PRESERVATIVE	REMARKS
1352-20-01	4-17-90	1035	GRAB	P1-1	1	X	X	X	X	X				PLEASE RETURN
1352-20-02		1040	"	P1-1	1	X	X	X	X	X				WHITE COPY OF
1352-20-03		1045	COMPOSITE	P1-1	1	X	X	X	X	X				C-O-C W/ REPORT
1352-20-04		1050	GRAB	~~P2~~ P1-2	1	X	X	X	X	X				
1352-20-05		1050	"	P1-2	1	X	X	X	X	X				
1352-20-06		1100	COMPOSITE	P1-2	1	X	X	X	X	X				
1352-20-07		1120	GRAB	P1-3	1	X	X	X	X	X				
1352-20-08		1125	"	P1-3	1	X	X	X	X	X				
1352-20-09		1130	COMPOSITE	P1-3	1	X	X	X	X	X				
1352-20-10		1140	GRAB	P1-4	1	X	X	X	X	X				
1352-20-11		1140	"	P1-4	1	X	X	X	X	X				
1352-20-12		1146	COMPOSITE	P1-4	1	X	X	X	X	X				
1352-20-13		1200	GRAB	P1-5	1	X	X	X	X	X	*		*	REQUEST 5-DAY
1352-20-14		1200	"	P1-5	1	X	X	X	X	X	*		*	TURNAROUND ON
1352-20-15		1205	COMPOSITE	P1-5	1	X	X	X	X	X	*		*	THESE 3 SAMPLES.
1352-20-16		1215	GRAB	P1-6	1	X	X	X	X	X				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 27	LABORATORY:
Eric Conard	4/18/90	2 01		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 27	ENSECO-CRL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER:
	4/18/90	18:00			(714) 698-6370
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X)YES ( )NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:
* ENSECO QUOTATION NUMBER: M0109901.LJC

PMCOBUS0106005

PMCOBUS0106005

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1352-20

PROJECT NAME: PGE TORCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC GONARD - Eric Gonard

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a, 4b, 4c	5a, 5b	7	8	10		PRESERVATIVE	REMARKS
1352-20-17	4-17-90	1215	GRAB	P1-6	1	X	X	X	X	X			PLEASE RETURN
1352-20-18		1215	COMPOSITE	P1-6	1	X	X	X	X	X			WHITE COPY OF
1352-20-19		1225	GRAB	P2-5	1	X	X	X	X	X			C-O-C W/ REPORT
1352-20-20		1225	"	P2-5	1	X	X	X	X	X			
1352-20-21		1230	COMPOSITE	P2-5	1	X	X	X	X	X			
1352-20-22		1330	GRAB	P3-2	1	X	X	X	X	X			
1352-20-23		1330	"	P3-2	1	X	X	X	X	X			
1352-20-24		332	COMPOSITE	P3-2	1	X	X	X	X	X			
1352-20-25		1335	GRAB	P4-2	1	X	X	X	X	X			
1352-20-26		1335	"	P4-2	1	X	X	X	X	X			
1352-20-27		1335	COMPOSITE	P4-2	1	X	X	X	X	X			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 27 / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 27	LABORATORY: ENSECO-CRL
Eric Gonard	4/18/90	1401			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER: (714) 898-6370
	4/18/90	18:00			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS: ENSECO QUOTATION NUMBER. M0109901, LJC

PMCOBUS0106006

PMCOBUS0106006

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

MITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653
Attn.: ERIC CONCARD 714-472-2444

Date Reported: 05/02/90 Page 1
Date Received: 04/19/90
Laboratory No.: 3551-1

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-10D, PI-4 GRAB 4/17/90 @ 1140 SAMPLED BY ERIC CONARD

PI-4 0-4"

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	26.2 <6	5.0	mg/kg	6010	1
Arsenic	8.60 8.2	0.5	mg/kg	7061	1
Barium	120. 15	0.5	mg/kg	6010	1
Beryllium	None Detected <3	0.5	mg/kg	6010	1
Cadmium	None Detected <5	0.5	mg/kg	6010	1
Chromium	889. 1300	0.5	mg/kg	6010	1
Cobalt	None Detected <10	2.5	mg/kg	6010	1
Copper	35.0 26	0.5	mg/kg	6010	1
Lead	2.87 <10	2.5	mg/kg	6010	1
Mercury	0.20 0.14	0.1	mg/kg	7471	1
Molybdenum	106. 20	2.5	mg/kg	6010	1
Nickel	7.15 <40	2.5	mg/kg	6010	1
Selenium	0.93 0.5	0.5	mg/kg	7741	1
Silver	None Detected <10	0.5	mg/kg	6010	1
Thallium	None Detected <2.5	5.0	mg/kg	6010	1
Vanadium	22.0 17	0.5	mg/kg	6010	1
Zinc	743. 1000	0.5	mg/kg	6010	1
Fluoride	63.9	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH (1:1)	7.47	0.01	pH Units	9040	1
Other Tests:					
Electrical Conductivity	87,933	100.	umhos/cm3	9050	1

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

PMCOBUS0106007

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

MITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653
Attn.: ERIC CONCARD 714-472-2444

Date Reported: 05/02/90 Page 1
Date Received: 04/19/90
Laboratory No.: 3551-2

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-17D, PI-6 GRAB 4/17/90 @ 1215 SAMPLED BY ERIC CONARD

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	None Detected <6	5.0	mg/kg	6010	1
Arsenic	2.61 2.3	0.5	mg/kg	7061	1
Barium	97.3 22	0.5	mg/kg	6010	1
Beryllium	None Detected <0.3	0.5	mg/kg	6010	1
Cadmium	None Detected <0.5	0.5	mg/kg	6010	1
Chromium	150. 190	0.5	mg/kg	6010	1
Cobalt	None Detected 1.0	2.5	mg/kg	6010	1
Copper	10.3 5.0	0.5	mg/kg	6010	1
Lead	2.92 1.5	2.5	mg/kg	6010	1
Mercury	None Detected <0.1	0.1	mg/kg	7471	1
Molybdenum	None Detected <2.	2.5	mg/kg	6010	1
Nickel	14.5 <4.0	2.5	mg/kg	6010	1
Selenium	None Detected <0.5	0.5	mg/kg	7741	1
Silver	None Detected <1.0	0.5	mg/kg	6010	1
Thallium	None Detected <2.5	5.0	mg/kg	6010	1
Vanadium	11.5 5.7	0.5	mg/kg	6010	1
Zinc	136. 150	0.5	mg/kg	6010	1
Fluoride	19.2	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH (1:1)	7.98	0.01	pH Units	9040	1
Other Tests:					
Electrical Conductivity	10,497	100.	mmho/cm3	9050	1

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

PMCOBUS0106008

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

MITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653
Attn.: ERIC CONCARD 714-472-2444

Date Reported: 05/02/90 Page 1
Date Received: 04/19/90
Laboratory No.: 3551-3

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-27D, P4-2 COMPOSITE
4/17/90 @ 1335 SAMPLED BY ERIC CONARD

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	None Detected <6.0	5.0	mg/kg	6010	1
Arsenic	3.49 2.5	0.5	mg/kg	7061	1
Barium	115. 20	0.5	mg/kg	6010	1
Beryllium	None Detected <0.3	0.5	mg/kg	6010	1
Cadmium	None Detected <0.5	0.5	mg/kg	6010	1
Chromium	34.8 23	0.5	mg/kg	6010	1
Cobalt	None Detected 1.6	2.5	mg/kg	6010	1
Copper	5.47 3.9	0.5	mg/kg	6010	1
Lead	5.34 1.1	2.5	mg/kg	6010	1
Mercury	None Detected <0.1	0.1	mg/kg	7471	1
Molybdenum	20.0 11	2.5	mg/kg	6010	1
Nickel	4.34 <4.0	2.5	mg/kg	6010	1
Selenium	None Detected <0.5	0.5	mg/kg	7741	1
Silver	None Detected <1.0	0.5	mg/kg	6010	1
Thallium	None Detected <2.5	5.0	mg/kg	6010	1
Vanadium	17.0 9.6	0.5	mg/kg	6010	1
Zinc	30.0 21.0	0.5	mg/kg	6010	1
Fluoride	39.7	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH (1:1)	8.20	0.01	pH Units	9040	1
Other Tests:					
Electrical Conductivity	57,252	100.	mmho/cm3	SW-9050	SW

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

PMCOBUS0106009

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
9100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

MITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 05/02/90
Date Received: 04/19/90
Laboratory No.: 3551-1

WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-10D, PI-4 GRAB 4/17/90 @ 1140 SAMPLED BY ERIC CONARD

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected <0.5	1.0	6010	1	15.
Arsenic	0.20 0.03	0.01	7061	1	5.0
Barium	0.49	0.1	6010	1	100.
Beryllium	None Detected	0.1	6010	1	0.75
Cadmium	None Detected	0.1	6010	1	1.0
Chromium	35.1 <0.05	0.1	6010	1	560.
Cobalt	0.02	0.5	6010	1	80.
Copper	2.53 <0.05	0.1	6010	1	25.
Lead	None Detected	0.5	6010	1	5.0
Mercury	None Detected	0.002	7471	1	0.2
Molybdenum	9.94 1.4	0.5	6010	1	350.
Nickel	None Detected	0.5	6010	1	20.
Selenium	None Detected	0.01	7741	1	1.0
Silver	None Detected	0.1	6010	1	5.0
Thallium	None Detected	1.0	6010	1	7.0
Vanadium	1.49	0.1	6010	1	24.
Zinc	69.9 <0.1	0.1	6010	1	250.
Fluorides	6.41 6.5	1.0	340.2	2	180.
Hexavalent Chromium	None Detected 0.04	1.0	7196	1	5.0

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour citric acid extraction.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

BY J. J. Eglin

J. J. Eglin

PMCOBUS0106010

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BE LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

MITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 05/02/90
Date Received: 04/19/90
Laboratory No.: 3551-2

WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-17D, PI-6 GRAB 4/17/90 @ 1215 SAMPLED BY ERIC CONARD

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected 0.5	1.0	6010	1	15.
Arsenic	0.03 <0.005	0.01	7061	1	5.0
Barium	1.98	0.1	6010	1	100.
Beryllium	None Detected	0.1	6010	1	0.75
Cadmium	None Detected	0.1	6010	1	1.0
Chromium	4.74 0.05	0.1	6010	1	560.
Cobalt	None Detected	0.5	6010	1	80.
Copper	0.31 0.05	0.1	6010	1	25.
Lead	None Detected	0.5	6010	1	5.0
Mercury	None Detected	0.002	7471	1	0.2
Molybdenum	None Detected 0.05	0.5	6010	1	350.
Nickel	None Detected	0.5	6010	1	20.
Selenium	None Detected	0.01	7741	1	1.0
Silver	None Detected	0.1	6010	1	5.0
Thallium	None Detected	1.0	6010	1	7.0
Vanadium	0.30	0.1	6010	1	24.
Zinc	10.9 0.05	0.1	6010	1	250.
Fluorides	7.63 1.0	1.0	340.2	2	180.
Hexavalent Chromium	None Detected 0.04	1.0	7196	1	5.0

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour citric acid extraction.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

BY J. J. Eglin
J. J. Eglin

PMCOBUS0106011

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

HITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 05/02/90
Date Received: 04/19/90
Laboratory No.: 3551-3

WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-27D, P4-2 COMPOSITE
4/17/90 @ 1335 SAMPLED BY ERIC CONARD

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected <0.5	1.0	6010	1	15.
Arsenic	0.05 0.03	0.01	7061	1	5.0
Barium	2.47	0.1	6010	1	100.
Beryllium	None Detected	0.1	6010	1	0.75
Cadmium	None Detected	0.1	6010	1	1.0
Chromium	1.74 <0.05	0.1	6010	1	560.
Cobalt	None Detected	0.5	6010	1	80.
Copper	0.10 <0.05	0.1	6010	1	25.
Lead	None Detected	0.5	6010	1	5.0
Mercury	None Detected	0.002	7471	1	0.2
Molybdenum	2.00 2.4	0.5	6010	1	350.
Nickel	None Detected	0.5	6010	1	20.
Selenium	None Detected	0.01	7741	1	1.0
Silver	None Detected	0.1	6010	1	5.0
Thallium	None Detected	1.0	6010	1	7.0
Vanadium	0.31	0.1	6010	1	24.
Zinc	1.75 <0.1	0.1	6010	1	250.
Fluorides	3.97 3.9	1.0	340.2	2	180.
Hexavalent Chromium	None Detected 0.06	1.0	7196	1	5.0

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour citric acid extraction.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

BY J. J. Eglin
J. J. Eglin

PMCOBUS0106012

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

MITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 05/02/90
Date Received: 04/19/90
Laboratory No.: 3551-1

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-10D, PI-4 GRAB 4/17/90 @ 1140 SAMPLED BY ERIC CONARD

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	0.01	0.01	7061	1	5.0
Chromium	0.14	0.01	6010	1	560.
Copper	0.02	0.01	6010	1	25.
Molybdenum	1.34	0.05	6010	1	350.
Zinc	0.06	0.01	6010	1	250.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0

:omment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

:D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

'LC = Soluble Threshold Limit Concentration

"Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
"Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

BY J. J. Eglin
J. J. Eglin

PMCOBUS0106013

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

MITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 05/02/90
Date Received: 04/19/90
Laboratory No.: 3551-2

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-17D, PI-6 GRAB 4/17/90 @ 1215 SAMPLED BY ERIC CONARD

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	None Detected	0.01	7061	1	5.0
Chromium	0.02	0.01	6010	1	560.
Copper	0.01	0.01	6010	1	25.
Molybdenum	0.10	0.05	6010	1	350.
Zinc	0.01	0.01	6010	1	250.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

BY J. J. Eglin
J. J. Eglin

PMCOBUS0106014

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BE LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

MITTELHAUSER CORP
23272 MILL CREEK RD SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 05/02/90
Date Received: 04/19/90
Laboratory No.: 3551-3

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PROJECT @1352-20, PG & E TOPOCK: 1352-20-27D, P4-2 COMPOSITE
4/17/90 @ 1335 SAMPLED BY ERIC CONARD

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	0.02	0.01	7061	1	5.0
Chromium	0.02	0.01	6010	1	560.
Copper	0.01	0.01	6010	1	25.
Molybdenum	2.01	0.05	6010	1	350.
Zinc	0.01	0.01	6010	1	250.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

BY J. J. Eglin
J. J. Eglin

PMCOBUS0106015

PMCOBUS0106015

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1352-20

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONARD - Eric Conard

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a, 4b, 4c	5a, 5b	7	8	10		PRESERVATIVE	REMARKS
551-1	1352-20-10D	4-17-90	1140	GRAB	P1-4	1	X	X	X	X	X			PLEASE RETURN
2	1352-20-17D	"	1215	GRAB	P1-6	1	X	X	X	X	X			WHITE COPY OF
-3	1352-20-27D	"	1325	COMPOSITE	P4-2	1	X	X	X	X	X			C-O-C W/ REPORT

* SHIPPED SAMPLES UPS NEXT DAY

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	3	LABORATORY:
Eric Conard	4/18/90	1300		TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	3	BC LABORATORIES, INC.
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: RICH EGLIN		LABORATORY PHONE NUMBER: (805) 327-4911
RELINQUISHED BY: (SIGNATURE)	DATE 4/19/90	TIME 9:55AM	RECEIVED FOR LABORATORY BY: (SIGNATURE) [illegible]	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO		

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106016

Enseco
A Corning Company

Enseco - CRL
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

DHS Certificate #157

September 28, 1990

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/046
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Project: (1352) PG & E - TOPOCK

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: G-9024220-001/046 shown above.

The samples were received by CRL in a chilled state, intact and with the chain-of-custody record attached.

Note that ND() means not detected at the reporting limit expressed within the parentheses. The detection limit is the reporting limit raised to reflect the dilution factor of the sample.

Solid samples are reported on "as received" basis.

Please note the cross-reference for Total Fluoride analysis is as follows:

BCA Analytical Report Sample ID	Enseco-CRL	Client's Sample ID
09-001-1	G-9024220-001	B-1-1
09-001-2	G-9024220-002	B-1-2
09-001-3	G-9024220-003	B-1-3
09-001-4	G-9024220-004	B-1-4
09-001-5	G-9024220-005	B-1-5
09-001-6	G-9024220-006	B-1-6
09-001-7	G-9024220-007	B-1-7
09-001-8	G-9024220-008	B-2-1
09-001-9	G-9024220-009	B-2-2
09-001-10	G-9024220-010	B-2-3
09-001-11	G-9024220-011	B-2-4
09-001-12	G-9024220-012	B-2-5
09-001-13	G-9024220-013	B-2-6
09-001-14	G-9024220-014	B-2-7
09-001-15	G-9024220-015	B-2-8
09-001-16	G-9024220-016	B-3-1
09-001-17	G-9024220-017	B-3-2
09-001-18	G-9024220-018	B-3-3
09-001-19	G-9024220-019	B-3-4
09-001-20	G-9024220-020	B-3-5

PMCOBUS0106017

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco

Enseco - CRL
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

DHS Certificate #157

September 28, 1990

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/046
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Project: (1352) PG & E - TOPOCK

Cross-reference continued:

09-001-21	G-9024220-021	B-3-6
09-001-22	G-9024220-022	B-3-7
09-001-23	G-9024220-023	B-4-1
09-001-24	G-9024220-024	B-4-2
09-001-25	G-9024220-025	B-4-3
09-001-26	G-9024220-026	B-4-4
09-001-27	G-9024220-027	B-4-5
09-001-28	G-9024220-028	B-4-6
09-001-29	G-9024220-029	B-4-7
09-001-30	G-9024220-030	B-4-8
09-001-31	G-9024220-031	1352-20-28
09-001-32	G-9024220-032	1352-20-29
09-001-33	G-9024220-033	1352-20-30
09-001-34	G-9024220-034	1352-20-31
09-001-35	G-9024220-035	1352-20-32
09-001-36	G-9024220-036	1352-20-33
09-001-37	G-9024220-037	1352-20-34
09-001-38	G-9024220-038	1352-20-35
09-001-39	G-9024220-039	1352-20-36
09-001-40	G-9024220-040	1352-20-37
09-001-41	G-9024220-041	1352-20-38
09-001-42	G-9024220-042	1352-20-39
09-001-43	G-9024220-043	1352-20-40
09-001-44	G-9024220-044	1352-20-41
09-001-45	G-9024220-045	1352-20-42
09-001-46	G-9024220-046	1352-20-43

PMCOBUS0106018

Reviewed

Approved

The Report Cover Letter is an integral part of this report.
This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-1

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	2.9	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	386	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	0.21	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	11.9	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	5.2	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	6.6	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	9.3	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	23.3	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	26.5	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Jerel Kimble
Approved

PMCOBUS0106019

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-1

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.008	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106020

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-002
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-2

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	1.9	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	130	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	8.1	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	5.2	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	20.7	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JB
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	6.8	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	20.4	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	21.3	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Approved

PMCOBUS0106021

PMCOBUS0106021

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-002
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-2

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/05/90	09/13/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106022

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-003
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-3

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	2.7	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	71.3	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	8.2	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	3.9	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	8.0	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	7.4	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	21.6	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	23.5	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Ferol Kimble
Approved

PMCOBUS0106023

Enseco
A CORNING Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-003
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-3

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.008	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Jerel Kimble
Approved

PMCOBUS0106024

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-004
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-4

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	1.5	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	92.7	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	11.3	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	5.3	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	10.1	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	10.8	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	25.2	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	29.4	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Approved

PMCOBUS0106025

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-004
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-4

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106026

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-005
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-5

METALS Prepared by EPA 3050 By ML
MERCURY Prepared by HG PREP By ML

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	3.6	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	79.8	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2.4	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.0	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	4.5	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	6.7	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	10.3	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Approved

PMCOBUS0106027

PMCOBUS0106027

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-006
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-6

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	2.3	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	29.8	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1.9	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	1.1	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	5.3	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	7.1	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Ferol Kimble
Approved

PMCOBUS0106028

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-006
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-6

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.008	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	0.044	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Jerel Kimble
Approved

PMCOBUS0106029

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-007
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-7

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	2.1	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	225	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	0.34	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	9.3	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	4.5	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	10.4	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	9.9	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	18.0	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	31.1	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Jerol Kimble
Approved

PMCOBUS0106030

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-007
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-1-7

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.005	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.029	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106031

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DHS Certificate #157

Laboratory Report

HITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-008
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-1

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	4.3	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	318	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	0.25	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	6.0	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.9	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	7.6	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	5.9	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	16.6	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	18.0	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Jewel Kimble
Approved

PMCOBUS0106032

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-008
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-1

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.006	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106033

PMCOBUS0106033

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-009
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-2

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	2.2	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	154	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	10.6	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	5.3	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	11.8	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	9.5	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	27.2	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	33.4	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Jerel Kimble
Approved

PMCOBUS0106034

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-009
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-2

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.011	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106035

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-010
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-3

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	1.7	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	184	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	0.25	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	15.3	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	6.3	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	12.8	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	10.9	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	32.9	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	33.8	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Ferol Kimble
Approved

PMCOBUS0106036

Enseco
A CORNING COMPANY

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 HILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-010
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-3

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.008	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	0.035	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106037

PMCOBUS0106037

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-011
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-4

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	2.1	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	77.2	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	8.4	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	4.6	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	8.6	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	8.1	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	23.0	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	23.8	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Ferol Kimble
Approved

PMCOBUS0106038

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-011
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-4

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.006	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Gerol Kimble
Approved

PMCOBUS0106039

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-012
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-5

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	3.4	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	49.4	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2.6	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	1.9	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	2.8	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	8.5	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	11.1	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Approved

PMCOBUS0106040

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-012
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-5

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.006	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.056	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106041

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-013
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-6

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	1.2	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	58.9	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2.1	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	1.7	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	2.8	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	6.1	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	9.7	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Terral Kimble
Approved

PMCOBUS0106042

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-013
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-6

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106043

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-014
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-7

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	1.2	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	64.5	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	9.4	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.3	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	3.1	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	5.3	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	9.8	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	11.4	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Approved

PMCOBUS0106044

PMCOBUS0106044

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-014
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-7

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.005	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Jerol Kimble
Approved

PMCOBUS0106045

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-015
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-8

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	2.2	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	100	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	0.22	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	5.8	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	3.0	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	5.4	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	5.5	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	15.7	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	17.5	2.	ND	2.	09/05/90	09/07/90	CV

Reviewed

Approved

PMCOBUS0106046

Enseco
A Corning Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-015
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-2-8

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.007	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106047

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A Corning Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-016
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-1

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/05/90	09/07/90	CV
Arsenic/TTLC (EPA 7061)	mg/kg	3.4	0.5	ND	.5	09/05/90	09/09/90	JW
Barium/TTLC (EPA 6010)	mg/kg	425	1.	ND	1.	09/05/90	09/07/90	CV
Beryllium/TTLC (EPA 6010)	mg/kg	0.26	0.2	ND	.2	09/05/90	09/07/90	CV
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	CV
Chromium, Tri/TTLC (EPA 6010)	mg/kg	11.0	1.	ND	1.	09/05/90	09/07/90	CV
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	5.0	1.	ND	1.	09/05/90	09/07/90	CV
Copper/TTLC (EPA 6010)	mg/kg	10.3	2.	ND	2.	09/05/90	09/07/90	CV
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/05/90	09/07/90	CV
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/05/90	09/06/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/05/90	09/07/90	CV
Nickel/TTLC (EPA 6010)	mg/kg	8.1	4.	ND	4.	09/05/90	09/07/90	CV
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/05/90	09/07/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/05/90	09/07/90	CV
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/05/90	09/07/90	CV
Vanadium/TTLC (EPA 6010)	mg/kg	25.6	1.	ND	1.	09/05/90	09/07/90	CV
Zinc/TTLC (EPA 6010)	mg/kg	28.9	2.	ND	2.	09/05/90	09/07/90	CV

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PMCOBUS0106048

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-016
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-1

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/05/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.005	0.005	ND	.005	09/05/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/05/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/05/90	09/13/90	JW

Reviewed

Feral Kimble
Approved

PMCOBUS0106049

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-017
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-2

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/06/90	09/07/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	2.2	0.5	ND	0.5	09/06/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	159	1.	ND	1.	09/06/90	09/07/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/06/90	09/07/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/06/90	09/07/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	7.9	1.	ND	1.	09/06/90	09/07/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	4.4	1.	ND	1.	09/06/90	09/07/90	JW
Copper/TTLC (EPA 6010)	mg/kg	6.4	2.	ND	2.	09/06/90	09/07/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/06/90	09/07/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/06/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/06/90	09/07/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	6.9	4.	ND	4.	09/06/90	09/07/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/06/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/06/90	09/07/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/06/90	09/07/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	21.2	1.	ND	1.	09/06/90	09/07/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	25.7	2.	ND	2.	09/06/90	09/07/90	JW

Reviewed

Gerald Kinkle
Approved

PMCOBUS0106050

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-017
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-2

METALS Prepared by EPA 3050 By NL.
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/06/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.008	0.005	ND	.005	09/06/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/06/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106051

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A Corning Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-018
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-3

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/06/90	09/07/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	1.4	0.5	ND	0.5	09/06/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	64.1	1.	ND	1.	09/06/90	09/07/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/06/90	09/07/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/06/90	09/07/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	4.2	1.	ND	1.	09/06/90	09/07/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.2	1.	ND	1.	09/06/90	09/07/90	JW
Copper/TTLC (EPA 6010)	mg/kg	4.0	2.	ND	2.	09/06/90	09/07/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/06/90	09/07/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/06/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/06/90	09/07/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/06/90	09/07/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/06/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/06/90	09/07/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/06/90	09/07/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	11.2	1.	ND	1.	09/06/90	09/07/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	13	2.	ND	2.	09/06/90	09/07/90	JW

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-018
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-3

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/06/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.007	0.005	ND	.005	09/06/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/06/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106053

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A Corning Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-019
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-4

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/06/90	09/07/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	4.3	0.5	ND	0.5	09/06/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	48.9	1.	ND	1.	09/06/90	09/07/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	0.32	0.2	ND	.2	09/06/90	09/07/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/06/90	09/07/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	7.5	1.	ND	1.	09/06/90	09/07/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	3.7	1.	ND	1.	09/06/90	09/07/90	JW
Copper/TTLC (EPA 6010)	mg/kg	6.3	2.	ND	2.	09/06/90	09/07/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/06/90	09/07/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/06/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/06/90	09/07/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	7.7	4.	ND	4.	09/06/90	09/07/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/06/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/06/90	09/07/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/06/90	09/07/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	22.2	1.	ND	1.	09/06/90	09/07/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	22.6	2.	ND	2.	09/06/90	09/07/90	JW

Reviewed

Approved

PMCOBUS0106054

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-019
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-4

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/06/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.006	0.005	ND	.005	09/06/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/06/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106055

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-020
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-5

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/06/90	09/07/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	1.4	0.5	ND	0.5	09/06/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	120	1.	ND	1.	09/06/90	09/07/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/06/90	09/07/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/06/90	09/07/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	6.9	1.	ND	1.	09/06/90	09/07/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.9	1.	ND	1.	09/06/90	09/07/90	JW
Copper/TTLC (EPA 6010)	mg/kg	5.3	2.	ND	2.	09/06/90	09/07/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/06/90	09/07/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/06/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/06/90	09/07/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	6.5	4.	ND	4.	09/06/90	09/07/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/06/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/06/90	09/07/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/06/90	09/07/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	13.5	1.	ND	1.	09/06/90	09/07/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	17.8	2.	ND	2.	09/06/90	09/07/90	JW

Reviewed

Approved

PMCOBUS0106056

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A Corning Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-020
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-5

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/06/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.006	0.005	ND	.005	09/06/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/06/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/06/90	09/13/90	JW

Reviewed

Terrel Kimble
Approved

PMCOBUS0106057

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-021
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-6

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	0.5	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	39.9	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2.6	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	1.3	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	3.3	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	4.2	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	7.1	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106058

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-021
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-6

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106059

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-022
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-7

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	0.7	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	34.0	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1.8	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	1.0	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	3.1	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	3.7	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	6.0	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106060

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-022
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-3-7

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106061

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-023
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-1

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	1.7	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	314	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	4.6	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.8	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	7.6	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	4.4	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	10.0	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	17.7	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106062

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-023
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-1

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106063

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-024
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-2

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	3.0	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	329	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	8.2	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	4.0	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	7.7	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	6.7	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	17.5	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	22.7	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106064

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-024
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-2

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.013	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106065

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-025
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-3

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	1.0	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	41.9	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	5.7	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.6	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	6.5	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	6.9	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	10.0	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	15.8	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106066

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-025
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-3

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106067

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-026
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-4

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	1.2	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	90.8	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	8.3	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	3.5	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	10.1	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	6.5	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	15.4	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	22.1	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Ferol Kimble
Approved

PMCOBUS0106068

Enseco
A Corning Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-026
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-4

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106069

PMCOBUS0106069

Enseco
A CORNING COMPANY

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-027
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-5

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	4.5	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	110	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	0.55	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	10.4	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	5.6	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	15.4	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	8.4	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	12	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	20.3	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	40.7	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Gerald Kimble
Approved

PMCOBUS0106070

PMCOBUS0106070

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-027
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-5

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.007	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.066	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106071

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-028
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-6

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	1.2	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	119	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	4.3	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.5	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	4.5	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	4.3	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	9.6	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	14.9	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106072

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-028
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-6

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.005	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106073

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-029
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-7

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	0.6	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	39.3	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2.5	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	1.3	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	2.3	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	3.8	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	6.8	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106074

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A Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-029
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-7

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106075

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Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-030
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-8

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	0.7	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	24.8	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1.3	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	2.8	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	5.4	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106076

PMCOBUS0106076

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-030
Date Sampled: 28-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: B-4-8

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	ND	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

PMCOBUS0106077

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-031
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-28

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	30*	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	9.2	1.0	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	56.5	5*	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	1.0*	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	2.5*	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	640	5*	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	5*	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	33.1	10*	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	25*	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	427	10*	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	20*	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	5*	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	250*	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	15.4	5*	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	436	10*	ND	2.	09/07/90	09/12/90	JW

* Higher detection limits due to sample matrix.

Reviewed

Approved

PMCOBUS0106078

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-031
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-28

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	1.2*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.32	0.05	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	37.6	0.4*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Approved

PMCOBUS0106079

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No. ~~G-9024220-032~~
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-29

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	0.7	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	23.6	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1.7	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	8.7	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	2.9	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	7.0	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106080

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-032
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-29

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.3*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.01	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.88	0.10*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Ferol Kimble
Approved

PMCOBUS0106081

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-033
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-30

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	10.6	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	72.4	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	0.72	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	559	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	1.0	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	39.0	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	333.0	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	19.2	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	533.3	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106082

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-033
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-30

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.3*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.47	0.05	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.1*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	39.1	0.1*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.1*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Approved

PMCOBUS0106083

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-034
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-31

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	1.4	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	36.9	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	27.6	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	2.8	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	38.0	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	4.8	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	29.0	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Fenol Kimble
Approved

PMCOBUS0106084

PMCOBUS0106084

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A Corning Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-034
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-31

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.30*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.006	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	1.3	0.10*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Ferel Kimble
Approved

PMCOBUS0106085

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-035
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-32

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	30*	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	9.6	1.0	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	69.7	5*	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	1.0*	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	2.5*	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	479.0	5*	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	5*	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	24.2	10*	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	25*	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	451	10*	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	20*	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	5*	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	250*	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	16.9	5*	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	389.0	10*	ND	2.	09/07/90	09/12/90	JW

* Higher detection limits due to sample matrix.

Reviewed

Approved

PMCOBUS0106086

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-035
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-32

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.60*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.42	0.05	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	44.1	0.2*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Gerald Kimble
Approved

PMCOBUS0106087

PMCOBUS0106087

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-036
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-33

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	0.7	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	22.2	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2.5	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	10.2	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	2.7	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	12.6	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106088

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-036
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-33

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.30*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.009	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.94	0.10*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to sample matrix.

Reviewed

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PMCOBUS0106089

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-037
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-34

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	5.2	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	78.4	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	445	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	1.3	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	17.9	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	129	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	14.3	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	336	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106090

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-037
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-34

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.30*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.037	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2*	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.1*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	9.4	0.1*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.1*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Ferol Kimble
Approved

PMCOBUS0106091

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-038
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-35

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	0.8	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	37.7	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	4.7	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	13.8	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	9.0	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	3.2	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	11.3	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106092

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-038
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-35

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.005	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.80	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

Reviewed

Approved

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-039
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-36

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	12*	ND	6.	09/07/90	09/14/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	9.4	1.0	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	136	2*	ND	1.	09/07/90	09/14/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.4*	ND	.2	09/07/90	09/14/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	2.4	1.0*	ND	.5	09/07/90	09/14/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	641	2*	ND	1.	09/07/90	09/14/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	2*	ND	1.	09/07/90	09/14/90	JW
Copper/TTLC (EPA 6010)	mg/kg	54.8	4*	ND	2.	09/07/90	09/14/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	10*	ND	5.	09/07/90	09/14/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	244	4*	ND	2.	09/07/90	09/14/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	8*	ND	4.	09/07/90	09/14/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	2*	ND	1.	09/07/90	09/14/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	100*	ND	5.	09/07/90	09/14/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	23.2	2*	ND	1.	09/07/90	09/14/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	572	4*	ND	2.	09/07/90	09/14/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Ferol Kimble
Approved

PMCOBUS0106094

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-039
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-36

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.30*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.12	0.025	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.1*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	17.1	0.1*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.1*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Approved

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DHS Certificate #157

Laboratory Report

~~MITTELHAUSER CORP~~
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-040
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-37

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/12/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	9.0	1.0	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	63.2	1.	ND	1.	09/07/90	09/12/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/12/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/12/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	1,420	1.	ND	1.	09/07/90	09/12/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Copper/TTLC (EPA 6010)	mg/kg	70.7	2.	ND	2.	09/07/90	09/12/90	JW
Lead/TTLC (EPA 6010)	mg/kg	5.5	5.	ND	5.	09/07/90	09/12/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	0.88	0.5	ND	0.1	09/07/90	09/10/90	JW
Molybdenum/TTLC (EPA 6010)	mg/kg	10.2	2.	ND	2.	09/07/90	09/12/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/12/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/12/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50.	ND	5.	09/07/90	09/12/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	17.8	1.	ND	1.	09/07/90	09/12/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	1,320	2.	ND	2.	09/07/90	09/12/90	JW

Reviewed

Approved

PMCOBUS0106096

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-040
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-37

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.30*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.084	0.010	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	2.1	0.10*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Approved

PMCOBUS0106097

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-041
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-38

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	30*	ND	6.	09/07/90	09/11/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	9.4	1.0	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	133	5*	ND	1.	09/07/90	09/11/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	1.0*	ND	.2	09/07/90	09/11/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	2.5*	ND	.5	09/07/90	09/11/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	742	5*	ND	1.	09/07/90	09/11/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	5*	ND	1.	09/07/90	09/11/90	JW
Copper/TTLC (EPA 6010)	mg/kg	36.9	10*	ND	2.	09/07/90	09/11/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	25*	ND	5.	09/07/90	09/11/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	115	10*	ND	2.	09/07/90	09/11/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	20*	ND	4.	09/07/90	09/11/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	5*	ND	1.	09/07/90	09/11/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	250*	ND	5.	09/07/90	09/11/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	31.2	5*	ND	1.	09/07/90	09/11/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	324	10*	ND	2.	09/07/90	09/11/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Approved

PMCOBUS0106098

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-041
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-38

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	1.2*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.10	0.010	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	10.1	0.4*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Gerol Kimble
Approved

PMCOBUS0106099

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-042
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-39

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/11/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	2.1	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	101	1.	ND	1.	09/07/90	09/11/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/11/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	7.0	1.	ND	1.	09/07/90	09/11/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	2.2	1.	ND	1.	09/07/90	09/11/90	JW
Copper/TTLC (EPA 6010)	mg/kg	4.6	2.	ND	2.	09/07/90	09/11/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/11/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	4.7	2.	ND	2.	09/07/90	09/11/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	4.9	4.	ND	4.	09/07/90	09/11/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/11/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/07/90	09/11/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	13.8	1.	ND	1.	09/07/90	09/11/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	16.2	2.	ND	2.	09/07/90	09/11/90	JW

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 HILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-042
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-39

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.06	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.013	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.51	0.02	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.02	ND	.02	09/07/90	09/13/90	JW

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PMCOBUS0106101

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-043
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-40

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	30*	ND	6.	09/07/90	09/11/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	8.8	1.0	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	74.9	5*	ND	1.	09/07/90	09/11/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	1.0*	ND	.2	09/07/90	09/11/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	2.5*	ND	.5	09/07/90	09/11/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	637	5*	ND	1.	09/07/90	09/11/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	5*	ND	1.	09/07/90	09/11/90	JW
Copper/TTLC (EPA 6010)	mg/kg	32.6	10*	ND	2.	09/07/90	09/11/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	25*	ND	5.	09/07/90	09/11/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	327	10*	ND	2.	09/07/90	09/11/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	20*	ND	4.	09/07/90	09/11/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	5*	ND	1.	09/07/90	09/11/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	250*	ND	5.	09/07/90	09/11/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	20.6	5*	ND	1.	09/07/90	09/11/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	375	10*	ND	2.	09/07/90	09/11/90	JW

* Higher detection limits due to high sodium content.

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PMCOBUS0106102

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/037
Date Sampled: 28-AUG-1990
29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK

Laboratory Control Sample Report

QC Batch	Parameter (Method)	Amt. Spiked	Units	Avg. Spike Recov.	Acceptable Range	Rel. Pct. Diff.	Acceptable Range
L90254007	ARSENIC (EPA 7061)	1.0	mg/kg	85.	50-127	7.	25
L90252003	ARSENIC (EPA 7061)	1.0	mg/kg	108.	50-127	4.	25
L90254006	ARSENIC (EPA 7061)	1.00	mg/kg	86.	50-127	5.	25
L90256027	ARSENIC (EPA 7061-L)	2.0	mg/L	101.	78-120	7.	20
L90256029	ARSENIC (EPA 7061-L)	2.0	mg/L	100.	78-120	0.	20
L90256028	ARSENIC (EPA 7061-L)	2.0	mg/L	93.	78-120	0.	20
L90261019	CHROMIUM, HEX/TTLC (EPA 7196)	1.00	mg/kg	102.	60-130	5.	40
L90261020	CHROMIUM, HEX/TTLC (EPA 7196)	1.0	mg/kg	97.	60-130	9.	40
L90261021	CHROMIUM, HEX/TTLC (EPA 7196)	1.00	mg/kg	100.	60-130	2.	40
L90257013	CHROMIUM HEX/STLC-DI H2O (EPA 7196)	0.05	mg/L	85.	60-130	17.	40
L90257014	CHROMIUM HEX/STLC-DI H2O (EPA 7196)	0.05	mg/L	85.	60-130	17.	40
L90257015	CHROMIUM HEX/STLC-DI H2O (EPA 7196)	0.05	mg/L	86.	60-130	19.	40
L90260001	MERCURY (EPA 7471)	0.002	mg/kg	108.	51-125	5.	42
L90254033	MERCURY (EPA 7471)	.0020	mg/kg	95.	51-125	11.	42
L90249024	MERCURY (EPA 7471)	.002	mg/kg	108.	51-125	14.	42
L90250039	SELENIUM (EPA 7741)	1.00	mg/kg	83.	45-128	5.	40
L90255008	SELENIUM (EPA 7741)	1.00	mg/kg	92.	45-128	1.	40
L90255009	SELENIUM (EPA 7741)	1.00	mg/kg	84.	45-128	8.	40
L90250009	PH (EPA 9045)	9.183	units	101.	98-102	0.	1
L90250011	PH (EPA 9045)	9.183	units	101.	98-102	0.	1
L90250010	PH (EPA 9045)	9.183	units	101.	98-102	0.	1
L90250013	PH/STLC-DI (EPA 9045)	9.183	units	101.	98-102	0.	1
L90250014	PH/STLC-DI (EPA 9045)	9.183	units	101.	98-102	0.	1
L90250012	PH/STLC-DI (EPA 9045)	9.183	units	101.	98-102	0.	1
L90249011	CONDUCTIVITY (EPA 9050)	1465	uohm/cm	95.	80-120	1.	20
L90249012	CONDUCTIVITY (EPA 9050)	1465	uohm/cm	96.	80-120	0.	20
L90249010	CONDUCTIVITY (EPA 9050)	1465	uohm/cm	95.	80-120	1.	20

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Jerel Kimble
Approved

PMCOBUS0106103

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-043
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-40

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	1.2*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.18	0.025	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	21.7	0.4*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-044
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-41

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/11/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	5.8	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	62.5	1.	ND	1.	09/07/90	09/11/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/11/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	0.58	0.5	ND	.5	09/07/90	09/11/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	527	1.	ND	1.	09/07/90	09/11/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/11/90	JW
Copper/TTLC (EPA 6010)	mg/kg	17.8	2.	ND	2.	09/07/90	09/11/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/11/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	131	2.	ND	2.	09/07/90	09/11/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/11/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/11/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/07/90	09/11/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	15.7	1.	ND	1.	09/07/90	09/11/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	355	2.	ND	2.	09/07/90	09/11/90	JW

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PMCOBUS0106105

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-044
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-41

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	1.2*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.076	0.010	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	14.9	0.4*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.4*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

~~Analysis No.:~~ G-9024220-045
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-42

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/11/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	0.8	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	37.5	1.	ND	1.	09/07/90	09/11/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/11/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	2.3	1.	ND	1.	09/07/90	09/11/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/11/90	JW
Copper/TTLC (EPA 6010)	mg/kg	ND	2.	ND	2.	09/07/90	09/11/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/11/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	3.5	2.	ND	2.	09/07/90	09/11/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/11/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/11/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/07/90	09/11/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	6.0	1.	ND	1.	09/07/90	09/11/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	8.5	2.	ND	2.	09/07/90	09/11/90	JW

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Approved

PMCOBUS0106107

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-045
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-42

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.30*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.005	0.005	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	0.50	0.10*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.10*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

Reviewed

Approved

PMCOBUS0106108

Enseco
A CORNING Company

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-046
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-43

METALS Prepared by EPA 3050 By NL
MERCURY Prepared by HG PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/TTLC (EPA 6010)	mg/kg	ND	6.	ND	6.	09/07/90	09/11/90	JW
Arsenic/TTLC (EPA 7061)	mg/kg	5.8	0.5	ND	0.5	09/07/90	09/10/90	JB
Barium/TTLC (EPA 6010)	mg/kg	63.0	1.	ND	1.	09/07/90	09/11/90	JW
Beryllium/TTLC (EPA 6010)	mg/kg	ND	0.2	ND	.2	09/07/90	09/11/90	JW
Cadmium/TTLC (EPA 6010)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JW
Chromium, Tri/TTLC (EPA 6010)	mg/kg	484	1.	ND	1.	09/07/90	09/11/90	JW
Chromium, Hex/TTLC (EPA 7196)	mg/kg	ND	0.2	ND	0.2	09/17/90	09/17/90	RJ
Cobalt/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/11/90	JW
Copper/TTLC (EPA 6010)	mg/kg	17.9	2.	ND	2.	09/07/90	09/11/90	JW
Lead/TTLC (EPA 6010)	mg/kg	ND	5.	ND	5.	09/07/90	09/11/90	JW
Mercury/TTLC (EPA 7471)	mg/kg	ND	0.1	ND	0.1	09/07/90	09/11/90	NL
Molybdenum/TTLC (EPA 6010)	mg/kg	132	2.	ND	2.	09/07/90	09/11/90	JW
Nickel/TTLC (EPA 6010)	mg/kg	ND	4.	ND	4.	09/07/90	09/11/90	JW
Selenium/TTLC (EPA 7741)	mg/kg	ND	0.5	ND	.5	09/07/90	09/11/90	JB
Silver/TTLC (EPA 6010)	mg/kg	ND	1.	ND	1.	09/07/90	09/11/90	JW
Thallium/TTLC (EPA 6010)	mg/kg	ND	50	ND	5.	09/07/90	09/11/90	JW
Vanadium/TTLC (EPA 6010)	mg/kg	14.8	1.	ND	1.	09/07/90	09/11/90	JW
Zinc/TTLC (EPA 6010)	mg/kg	373	2.	ND	2.	09/07/90	09/11/90	JW

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-046
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK
Sample ID: 1352-20-43

METALS Prepared by EPA 3050 By NL
STLC Prepared by WET PREP By NL

Parameter	Units	Sample Result	Sample RL	Blank Result	Blank RL	Date Prepared	Date Analyzed	By
Antimony/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.60*	ND	.06	09/07/90	09/13/90	JW
Arsenic/STLC-DI H2O (EPA 7061-L)	mg/L	0.10	0.010	ND	.005	09/07/90	09/12/90	JW
Chromium Tri/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2	ND	.2	09/07/90	09/13/90	JW
Chromium Hex/STLC-DI H2O (EPA 7196-L)	mg/L	ND	0.2	ND	.2	09/13/90	09/13/90	RJ
Copper/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2*	ND	.02	09/07/90	09/13/90	JW
Molybdenum/STLC-DI H2O (EPA 6010-L)	mg/L	17.6	0.2*	ND	.02	09/07/90	09/13/90	JW
Zinc/STLC-DI H2O (EPA 6010-L)	mg/L	ND	0.2*	ND	.02	09/07/90	09/13/90	JW

* Higher detection limits due to high sodium content.

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DHS Certificate #157

Laboratory Report

HITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/045
Date Sampled: 28-AUG-1990
29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Date Analyzed: 6-SEP-1990
10-SEP-1990
7-SEP-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK

Sample ID	Conductivity uohm/cm EPA 9050	TDS/STLC-DI mg/L EPA 160.1	Fluoride, STLC (DI H2O EXT) mg/L EPA 340.2	pH units EPA 9045	pH/STLC-DI units EPA 9045
1352-20-42	26,100	3,740	1.1	8.4	9.1
Blank	ND(10.)	ND(10)	ND(0.1)	NA	NA

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/045
Date Sampled: 28-AUG-1990
29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Date Analyzed: 6-SEP-1990
10-SEP-1990
7-SEP-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK

Sample ID	Conductivity uohm/cm EPA 9050	TDS/STLC-DI mg/L EPA 160.1	Fluoride, STLC (DI H2O EXT) mg/L EPA 340.2	pH units EPA 9045	pH/STLC-DI units EPA 9045
B-1-1	132	65	0.1	9.4	9.8
B-1-2	1,960	500	0.22	8.4	9.1
B-1-3	455	150	0.17	9.2	10.0
B-1-4	1,010	130	ND(0.1)	9.0	9.8
B-1-5	280	60	0.17	9.2	9.8
B-1-6	255	50	0.11	9.4	9.9
B-1-7	300	90	0.54	9.7	10.1
B-2-1	1,050	170	ND(0.1)	8.6	9.5
B-2-2	510	120	0.22	9.4	9.9
B-2-3	1,290	180	0.27	9.0	9.8
B-2-4	1,830	360	0.18	8.5	9.2
B-2-5	717	95	0.17	9.1	9.8
B-2-6	211	25	ND(0.1)	9.4	9.9
B-2-7	279	55	ND(0.1)	9.6	10.0
B-2-8	297	40	0.13	9.5	10.0
B-3-1	2,280	600	0.24	8.4	9.1
B-3-2	959	120	ND(0.1)	8.9	9.7
B-3-3	1,270	150	ND(0.1)	8.8	9.7
B-3-4	1,650	420	0.26	8.5	9.1
B-3-5	790	150	0.21	8.9	9.6
B-3-6	257	55	ND(0.1)	10.0	10.0
B-3-7	187	75	ND(0.1)	10.0	10.0
B-4-1	240	65	ND(0.1)	9.3	9.8
B-4-2	335	80	0.36	9.3	9.9
B-4-3	1,470	330	0.21	8.6	9.4
B-4-4	665	160	ND(0.1)	9.1	9.8
B-4-5	1,490	270	1.0	9.0	9.9
B-4-6	521	130	0.34	9.7	10.1
B-4-7	251	40	ND(0.1)	9.9	9.9
B-4-8	189	60	ND(0.1)	10.1	10.0
1352-20-29	45,100	5,600	0.9	8.5	9.2
1352-20-31	14,900	1,540	0.69	8.3	9.1
1352-20-33	38,100	4,570	0.81	8.6	9.3
1352-20-35	11,300	1,570	1.0	8.1	9.3
1352-20-37	31,200	5,950	2.9	8.1	8.5
1352-20-39	19,400	2,110	1.9	8.6	9.6

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Ferel Kimble
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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-031/046
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Date Analyzed: 6-SEP-1990
10-SEP-1990
7-SEP-1990
Sample Type: SLUDGE

Project: (1352) PG & E - TOPOCK

Sample ID	Conductivity uohm/cm EPA 9050	TDS/STLC-DI mg/L EPA 160.1	Fluoride, STLC (DI H2O EXT) mg/L EPA 340.2	pH units EPA 9045	pH/STLC-DI units EPA 9045
1352-20-28	62,800	18,900	4.7	7.6	7.8
1352-20-30	42,400	10,300	4.3	7.6	7.9
1352-20-32	84,900	19,500	5.9	7.5	7.9
1352-20-34	76,700	11,900	3.8	7.8	8.2
1352-20-36	51,400	10,790	3.2	8.4	8.0
1352-20-38	89,100	16,600	6.2	7.9	8.5
1352-20-40	70,800	18,800	4.7	7.9	8.3
1352-20-41	54,100	11,800	4.8	7.6	8.0
1352-20-43	49,400	14,300	3.8	7.8	8.3
Blank	ND(10.)	ND(10)	ND(0.1)	NA	NA

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/037
Date Sampled: 28-AUG-1990
29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG &.E - TOPOCK

Matrix Spike/Matrix Spike Duplicate Report

Sample Number	Parameter (Method)	Units	Observed Concentration Sample	MS	MSD	Amt. Spiked	% Recovery MS	MSD	Avg.	% RPD
9024220-001	FLUORIDE (EPA 340.2)	mg/L	.76	2.82	2.80	2.00	103	102	103	1
9024220-027	FLUORIDE (EPA 340.2)	mg/L	10.2	31.5	31.7	20.0	107	108	107	1
9024220-046	FLUORIDE (EPA 340.2)	mg/L	38.5	58.9	59.2	20.0	102	104	103	2
9024220-001	ANTIMONY (EPA 6010)	mg/kg	ND	160	168	250	64	67	66	5
9024220-021	ANTIMONY (EPA 6010)	mg/kg	0.072	230	219	250	92	88	90	5
9024907-004	ANTIMONY (EPA 6010)	mg/kg	0.376	186	182	250	74	73	73	2
9024220-017	ANTIMONY (EPA 6010)	mg/kg	ND	179	167	250	72	67	69	7
9024220-021	BARIUM (EPA 6010)	mg/kg	41.8	957	931	1000	92	89	90	3
9024220-001	BARIUM (EPA 6010)	mg/kg	352	1300	1350	1000	95	100	97	5
9024907-004	BARIUM (EPA 6010)	mg/kg	208	870	845	1000	66	64	65	4
9024220-017	BARIUM (EPA 6010)	mg/kg	197	982	944	1000	79	75	77	5
9024907-004	BERYLLIUM (EPA 6010)	mg/kg	0.245	21.4	20.7	25	85	82	83	3
9024220-001	BERYLLIUM (EPA 6010)	mg/kg	0.188	21.7	20.9	25	86	83	84	4
9024220-021	BERYLLIUM (EPA 6010)	mg/kg	0.0967	25.0	24.0	25	100	96	98	4
9024220-017	BERYLLIUM (EPA 6010)	mg/kg	0.122	20.2	19.9	25	80	79	80	2
9024907-004	CADMIUM (EPA 6010)	mg/kg	4.01	20.1	20.5	25	64	66	65	3
9024220-021	CADMIUM (EPA 6010)	mg/kg	ND	21.4	20.6	25	86	82	84	4
9024220-001	CADMIUM (EPA 6010)	mg/kg	0.0218	18.9	18.3	25	76	73	74	3
9024220-017	CADMIUM (EPA 6010)	mg/kg	0.0981	16.6	16.8	25	66	67	66	1
9024220-021	CHROMIUM (EPA 6010)	mg/kg	2.78	87.2	83.5	100	84	81	83	5
9024907-004	CHROMIUM (EPA 6010)	mg/kg	10.7	80.1	83.0	100	69	72	71	4
9024220-001	CHROMIUM (EPA 6010)	mg/kg	10.6	83.8	79.6	100	73	69	71	6
9024220-017	CHROMIUM (EPA 6010)	mg/kg	7.21	79.9	75.3	100	73	68	70	7
9024220-001	COBALT (EPA 6010)	mg/kg	4.39	192	184	250	75	72	73	4
9024907-004	COBALT (EPA 6010)	mg/kg	1.19	174	174	250	69	69	69	0
9024220-021	COBALT (EPA 6010)	mg/kg	1.44	218	208	250	87	83	85	5
9024220-017	COBALT (EPA 6010)	mg/kg	4.00	175	174	250	68	68	68	1
9024220-001	COPPER (EPA 6010)	mg/kg	6.09	118	116	125	90	88	89	2
9024220-021	COPPER (EPA 6010)	mg/kg	2.68	120	118	125	94	92	93	2
9024907-004	COPPER (EPA 6010)	mg/kg	14.0	124	112	125	88	78	83	12
9024220-017	COPPER (EPA 6010)	mg/kg	7.03	111	109	125	83	82	82	2
9024220-021	LEAD (EPA 6010)	mg/kg	1.94	214	203	250	85	80	83	5
9024220-001	LEAD (EPA 6010)	mg/kg	1.28	186	176	250	74	70	72	6
9024907-004	LEAD (EPA 6010)	mg/kg	1.71	166	169	250	66	67	66	2
9024220-017	LEAD (EPA 6010)	mg/kg	1.22	161	160	250	64	64	64	1
9024907-004	MOLYBDENUM (EPA 6010)	mg/kg	4.09	95.1	93.2	125	73	71	72	2
9024220-001	MOLYBDENUM (EPA 6010)	mg/kg	0.455	95.5	92.6	125	76	74	75	3
9024220-021	MOLYBDENUM (EPA 6010)	mg/kg	0.340	112	106	125	89	85	87	6
9024220-017	MOLYBDENUM (EPA 6010)	mg/kg	0.581	91.5	90.0	125	73	72	72	2
9024907-004	NICKEL (EPA 6010)	mg/kg	16.7	184	185	250	67	67	67	1

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Carol Kimble
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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/037
Date Sampled: 28-AUG-1990
29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK

Matrix Spike/Matrix Spike Duplicate Report

Sample Number	Parameter (Method)	Units	Observed Concentration Sample	MS	MSD	Amt. Spiked	% Recovery MS	MSD	Avg.	% RPD
9024220-021	NICKEL (EPA 6010)	mg/kg	3.36	218	207	250	86	82	84	5
9024220-001	NICKEL (EPA 6010)	mg/kg	8.08	191	183	250	73	70	72	5
9024220-017	NICKEL (EPA 6010)	mg/kg	5.40	176	176	250	68	68	68	0
9024220-021	SILVER (EPA 6010)	mg/kg	0.059	20	19.3	25	80	77	78	4
9024907-004	SILVER (EPA 6010)	mg/kg	0.37	17.8	17.9	25	70	70	70	1
9024220-001	SILVER (EPA 6010)	mg/kg	0.089	18.8	18.2	25	75	72	74	3
9024220-017	SILVER (EPA 6010)	mg/kg	0.261	17.8	17.6	25	70	69	70	1
9024220-001	THALLIUM (EPA 6010)	mg/kg	6.44	24.8	25.8	25	73	77	75	5
9024907-004	THALLIUM (EPA 6010)	mg/kg	4.73	20.9	18.9	25	65	57	61	13
9024220-021	THALLIUM (EPA 6010)	mg/kg	1.72	22.4	21.6	25	83	80	81	4
9024220-017	THALLIUM (EPA 6010)	mg/kg	6.08	24.3	24.4	25	73	73	73	1
9024220-001	VANADIUM (EPA 6010)	mg/kg	20.8	219	211	250	79	76	78	4
9024220-021	VANADIUM (EPA 6010)	mg/kg	4.52	226	217	250	89	85	87	4
9024907-004	VANADIUM (EPA 6010)	mg/kg	45.9	221	222	250	70	70	70	1
9024220-017	VANADIUM (EPA 6010)	mg/kg	17.6	204	203	250	75	74	74	1
9024220-021	ZINC (EPA 6010)	mg/kg	8.22	232	220	250	90	85	87	6
9024220-001	ZINC (EPA 6010)	mg/kg	23.5	225	221	250	81	79	80	2
9024907-004	ZINC (EPA 6010)	mg/kg	31.9	208	205	250	70	69	70	2
9024220-017	ZINC (EPA 6010)	mg/kg	22.2	197	199	250	70	71	70	1
9024220-001	ARSENIC (EPA 7061)	mg/kg	2.9	24.5	26.0	25.0	86	92	89	7
9024220-021	ARSENIC (EPA 7061)	mg/kg	0.50	18.5	16.5	25.0	72	64	68	12
9024220-017	ARSENIC (EPA 7061)	mg/kg	2.2	20.0	20.0	25.0	71	71	71	0
9024220-032	CHROMIUM, HEX/TTLC (EPA 7196)	mg/kg	ND	0.37	0.35	0.50	74	70	72	6
024220-012	CHROMIUM, HEX/TTLC (EPA 7196)	mg/kg	ND	0.39	0.40	0.50	78	80	79	3
025027-004	CHROMIUM, HEX/TTLC (EPA 7196)	mg/kg	ND	0.32	0.35	0.50	64	70	67	9

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Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/037
Date Sampled: 28-AUG-1990
29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK

Matrix Spike/Matrix Spike Duplicate Report

Sample Number	Parameter (Method)	Units	Observed Concentration Sample	MS	MSD	Amt. Spiked	% Recovery MS	MSD	Avg.	% RPD
9024220-020	CHROMIUM HEX/STLC-DI H2O (EPA 7196)	mg/L	ND	0.040	0.043	0.05	80	86	83	7
9024220-044	CHROMIUM HEX/STLC-DI H2O (EPA 7196)	mg/L	ND	0.039	0.037	0.05	78	74	76	5
9024220-045	CHROMIUM HEX/STLC-DI	mg/L	ND	0.037	0.034	0.05	74	68	71	9
9024220-001	MERCURY (EPA 7471)	mg/kg	.014	.210	.200	.175	112	106	109	5
9024220-021	MERCURY (EPA 7471)	mg/kg	0.007	0.178	0.186	0.175	98	102	100	5
9024220-017	MERCURY (EPA 7471)	mg/kg	ND	0.175	0.172	0.175	100	98	99	2
9024220-021	SELENIUM (EPA 7741)	mg/kg	ND	9.75	8.50	12.5	78	68	73	14
9024220-001	SELENIUM (EPA 7741)	mg/kg	ND	11.75	9.00	12.5	94	72	83	27
9024220-017	SELENIUM (EPA 7741)	mg/kg	ND	10.25	8.25	12.5	82	66	74	22

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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
9024220-001	7-SEP-1990	FLUORIDE (EPA 340.2)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		ANTIMONY (EPA 6010)	G-9024220-001 — MS Out
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		BARIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015

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Geral Kimble
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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-016
		BERYLLIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		CADMIUM (EPA 6010)	G-9024220-001 — ms out
			G-9024220-002
			G-9024220-003
			G-9024220-004 —
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		CHROMIUM (EPA 6010)	G-9024220-001 — ms out
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		COBALT (EPA 6010)	G-9024220-001
			G-9024220-002

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		COPPER (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		LEAD (EPA 6010)	G-9024220-001 — MSO
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		MOLYBDENUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005

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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		NICKEL (EPA 6010)	G-9024220-001 MS Cont
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		SILVER (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		THALLIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		VANADIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		ZINC (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		ARSENIC (EPA 7061)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		MERCURY (EPA 7471)	G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		SELENIUM (EPA 7741)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
9024220-012	18-SEP-1990	CHROMIUM, HEX/TTLC (EPA 7196)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
9024220-017	11-SEP-1990	ANTIMONY (EPA 6010) — MS out	G-9024220-042
			G-9024220-045
		BARIUM (EPA 6010)	G-9024220-042
			G-9024220-045
		BERYLLIUM (EPA 6010)	G-9024220-042
			G-9024220-045
		CADMIUM (EPA 6010) — MS out	G-9024220-042
			G-9024220-045
		CHROMIUM (EPA 6010) — MS out	G-9024220-042
			G-9024220-045
		COBALT (EPA 6010)	G-9024220-042
			G-9024220-045
		COPPER (EPA 6010)	G-9024220-042
			G-9024220-045
		LEAD (EPA 6010) — MS Out	G-9024220-042
			G-9024220-045
		MOLYBDENUM (EPA 6010)	G-9024220-042
			G-9024220-045
		NICKEL (EPA 6010) — MS out	G-9024220-042
			G-9024220-045
		SILVER (EPA 6010) — MS out	G-9024220-042
			G-9024220-045
		THALLIUM (EPA 6010) — MS out	G-9024220-042
			G-9024220-045
		VANADIUM (EPA 6010)	G-9024220-042
			G-9024220-045
		ZINC (EPA 6010) — MS out	G-9024220-042
			G-9024220-045
		ARSENIC (EPA 7061) — MS out	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
			G-9024220-042
			G-9024220-045
		MERCURY (EPA 7471)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
			G-9024220-042
			G-9024220-045
		SELENIUM (EPA 7741)	G-9024220-017
			G-9024220-018
			G-9024220-019

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Matrix Spike/Matrix Spike Duplicate Report ~~Cross-Reference~~

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-020
			G-9024220-042
			G-9024220-045
9024220-020	13-SEP-1990	CHROMIUM HEX/STLC-DI H2O (EPA 7196)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
9024220-021	14-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		BARIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		BERYLLIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		CADMIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		CHROMIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		COBALT (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		COPPER (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		LEAD (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		MOLYBDENUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		NICKEL (EPA 6010) MS out	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		SILVER (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		THALLIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		VANADIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		ZINC (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		ARSENIC (EPA 7061) MS only	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		MERCURY (EPA 7471)	G-9024220-036
			G-9024220-038
			G-9024220-040
			G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		SELENIUM (EPA 7741)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
9024220-027	7-SEP-1990	FLUORIDE (EPA 340.2)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040

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Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
9024220-032	18-SEP-1990	CHROMIUM, HEX/TTLC (EPA 7196) MS MSD	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
9024220-044	13-SEP-1990	CHROMIUM HEX/STLC-DI H2O (EPA 7196) MS MSD	G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-031
			G-9024220-032
			G-9024220-033
			G-9024220-034
			G-9024220-035
			G-9024220-036
			G-9024220-037
			G-9024220-038
			G-9024220-039
			G-9024220-040
			G-9024220-041
			G-9024220-042
			G-9024220-043
			G-9024220-044
9024220-045	13-SEP-1990	CHROMIUM HEX/STLC DI H2O (EPA 7196)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-045
			G-9024220-046
9024220-046	7-SEP-1990	FLUORIDE (EPA 340.2)	G-9024220-042
			G-9024220-045
9024907-004	7-SEP-1990	ANTIMONY (EPA 6010) MS MSD	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		BARIUM (EPA 6010) MS MSD	G-9024220-017

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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-018
			G-9024220-019
			G-9024220-020
		BERYLLIUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		CADMIUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		CHROMIUM (EPA 6010) — MS only	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		COBALT (EPA 6010) MS only	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		COPPER (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		LEAD (EPA 6010) MS only	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		MOLYBDENUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		NICKEL (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		SILVER (EPA 6010) — MS only	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		THALLIUM (EPA 6010) — MS only	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		VANADIUM (EPA 6010) — MS only	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020

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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		ZINC (EPA 6010) MS and	G-9024220-017 G-9024220-018 G-9024220-019 G-9024220-020
9025027-004	18-SEP-1990	CHROMIUM, HEX/TTLC (EPA 7196) MS and	G-9024220-042 G-9024220-045

Reviewed

Ferol Kemble
Approved

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/037
Date Sampled: 28-AUG-1990
29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK

Laboratory Control Sample Report

QC Batch	Parameter (Method)	Amt. Spiked	Units	Avg. Spike Recov.	Acceptable Range	Rel. Pct. Diff.	Acceptable Range
L90254002	TDS/STLC-DI (EPA 160.1)	270.9	mg/L	115.	70-120	2.	30
L90254003	TDS/STLC-DI (EPA 160.1)	270.9	mg/L	115.	70-120	8.	30
L90254004	TDS/STLC-DI (EPA 160.1)	270.9	mg/L	120.	70-120	9.	30
L90250034	FLUORIDE, STLC (EPA 340.2)	2.00	mg/L	96.	69-125	6.	17
L90250033	FLUORIDE, STLC (EPA 340.2)	2.00	mg/L	96.	69-125	2.	17
L90250035	FLUORIDE, STLC (EPA 340.2)	2.00	mg/L	94.	69-125	3.	17
L90257024	ANTIMONY (EPA 6010)	1.0	mg/kg	98.	60-125	2.	25
L90256026	ANTIMONY (EPA 6010)	1.0	mg/kg	91.	60-125	3.	25
L90256020	ANTIMONY (EPA 6010)	1.0	mg/kg	108.	60-125	0.	25
L90255012	ANTIMONY (EPA 6010)	1.0	mg/kg	95.	60-125	1.	25
L90256020	BARIUM (EPA 6010)	1.0	mg/kg	103.	65-125	2.	30
L90256026	BARIUM (EPA 6010)	1.0	mg/kg	92.	65-125	2.	30
L90257024	BARIUM (EPA 6010)	1.0	mg/kg	98.	65-125	1.	30
L90255012	BARIUM (EPA 6010)	1.0	mg/kg	95.	65-125	0.	30
L90256020	BERYLLIUM (EPA 6010)	1.0	mg/kg	104.	60-126	3.	30
L90257024	BERYLLIUM (EPA 6010)	1.0	mg/kg	96.	60-126	2.	30
L90256026	BERYLLIUM (EPA 6010)	1.0	mg/kg	93.	60-126	4.	30
L90255012	BERYLLIUM (EPA 6010)	1.0	mg/kg	95.	60-126	1.	30
L90257024	CADMIUM (EPA 6010)	1.0	mg/kg	86.	63-126	2.	25
L90256020	CADMIUM (EPA 6010)	1.0	mg/kg	101.	63-126	1.	25
L90256026	CADMIUM (EPA 6010)	1.0	mg/kg	86.	63-126	2.	25
L90255012	CADMIUM (EPA 6010)	1.0	mg/kg	91.	63-126	0.	25
L90256026	CHROMIUM (EPA 6010)	1.0	mg/kg	92.	63-126	2.	30
L90256020	CHROMIUM (EPA 6010)	1.0	mg/kg	106.	63-126	2.	30
L90257024	CHROMIUM (EPA 6010)	1.0	mg/kg	98.	63-126	2.	30
L90255012	CHROMIUM (EPA 6010)	1.0	mg/kg	95.	63-126	0.	30
L90256026	COBALT (EPA 6010)	1.0	mg/kg	88.	63-126	2.	35
L90257024	COBALT (EPA 6010)	1.0	mg/kg	91.	63-126	4.	35
L90256020	COBALT (EPA 6010)	1.0	mg/kg	101.	63-126	2.	35
L90255012	COBALT (EPA 6010)	1.0	mg/kg	91.	63-126	0.	35
L90257024	COPPER (EPA 6010)	1.0	mg/kg	100.	62-126	0.	30
L90256026	COPPER (EPA 6010)	1.0	mg/kg	90.	62-126	2.	30
L90256020	COPPER (EPA 6010)	1.0	mg/kg	103.	62-126	3.	30
L90255012	COPPER (EPA 6010)	1.0	mg/kg	94.	62-126	0.	30
L90256020	LEAD (EPA 6010)	1.0	mg/kg	104.	61-126	0.	30
L90256026	LEAD (EPA 6010)	1.0	mg/kg	87.	61-126	3.	30
L90257024	LEAD (EPA 6010)	1.0	mg/kg	92.	61-126	4.	30

Reviewed

Jerrel Kimble
Approved

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN

Analysis No.: G-9024220-001/037
Date Sampled: 28-AUG-1990
29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SOLID

Project: (1352) PG & E - TOPOCK

Laboratory Control Sample Report

QC Batch	Parameter (Method)	Amt. Spiked	Units	Avg. Spike Recov.	Acceptable Range	Rel. Pct. Diff.	Acceptable Range
L90255012	LEAD (EPA 6010)	1.0	mg/kg	91	61-126	2.	30
L90256020	MOLYBDENUM (EPA 6010)	1.0	mg/kg	102.	61-126	2.	32
L90257024	MOLYBDENUM (EPA 6010)	1.0	mg/kg	94.	61-126	3.	32
L90256026	MOLYBDENUM (EPA 6010)	1.0	mg/kg	89.	61-126	2.	32
L90255012	MOLYBDENUM (EPA 6010)	1.0	mg/kg	92.	61-126	1.	32
L90257024	NICKEL (EPA 6010)	1.0	mg/kg	95.	61-126	3.	25
L90256020	NICKEL (EPA 6010)	1.0	mg/kg	107.	61-126	1.	25
L90256026	NICKEL (EPA 6010)	1.0	mg/kg	92.	61-126	2.	25
L90255012	NICKEL (EPA 6010)	1.0	mg/kg	96.	61-126	0.	25
L90256026	SILVER (EPA 6010)	1.0	mg/kg	81.	60-126	2.	30
L90256020	SILVER (EPA 6010)	1.0	mg/kg	92.	60-126	1.	30
L90257024	SILVER (EPA 6010)	1.0	mg/kg	94.	60-126	0.	30
L90255012	SILVER (EPA 6010)	1.0	mg/kg	88.	60-126	0.	30
L90256026	THALLIUM (EPA 6010)	1.0	mg/kg	91.	60-126	2.	30
L90257024	THALLIUM (EPA 6010)	1.0	mg/kg	90.	60-126	2.	30
L90256020	THALLIUM (EPA 6010)	1.0	mg/kg	103.	60-126	2.	30
L90255012	THALLIUM (EPA 6010)	1.0	mg/kg	92.	60-126	1.	30
L90257024	VANADIUM (EPA 6010)	1.0	mg/kg	91.	60-126	1.	25
L90256026	VANADIUM (EPA 6010)	1.0	mg/kg	87.	60-126	2.	25
L90256020	VANADIUM (EPA 6010)	1.0	mg/kg	97.	60-126	2.	25
L90255012	VANADIUM (EPA 6010)	1.0	mg/kg	89.	60-126	0.	25
L90256020	ZINC (EPA 6010)	1.0	mg/kg	102.	60-126	0.	30
L90256026	ZINC (EPA 6010)	1.0	mg/kg	87.	60-126	3.	30
L90257024	ZINC (EPA 6010)	1.0	mg/kg	92.	60-126	4.	30
L90255012	ZINC (EPA 6010)	1.0	mg/kg	91.	60-126	1.	30
L90257019	ANTIMONY (EPA 6010-L)	2.0	mg/L	88.	70-130	8.	30
L90257023	ANTIMONY (EPA 6010-L)	2.0	mg/L	94.	70-130	9.	30
L90257022	ANTIMONY (EPA 6010-L)	2.0	mg/L	96.	70-130	3.	30
L90257023	CHROMIUM (EPA 6010-L)	2.0	mg/L	94.	71-123	8.	20
L90257019	CHROMIUM (EPA 6010-L)	2.0	mg/L	89.	71-123	5.	20
L90257022	CHROMIUM (EPA 6010-L)	2.0	mg/L	96.	71-123	2.	20
L90257019	COPPER (EPA 6010-L)	2.0	mg/L	96.	62-126	5.	30
L90257023	COPPER (EPA 6010-L)	2.0	mg/L	96.	62-126	5.	30
L90257022	COPPER (EPA 6010-L)	2.0	mg/L	90.	62-126	6.	30
L90257023	MOLYBDENUM (EPA 6010-L)	2.0	mg/L	94.	69-124	8.	20
L90257019	MOLYBDENUM (EPA 6010-L)	2.0	mg/L	88.	69-124	4.	20
L90257022	MOLYBDENUM (EPA 6010-L)	2.0	mg/L	95.	69-124	1.	20
L90257019	ZINC (EPA 6010-L)	2.0	mg/L	80.	70-128	7.	20
L90257023	ZINC (EPA 6010-L)	2.0	mg/L	88.	70-128	10.	20
L90257022	ZINC (EPA 6010-L)	2.0	mg/L	83.	70-128	3.	20

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
L90249010	6-SEP-1990	CONDUCTIVITY (EPA 9050)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
L90249011	6-SEP-1990	CONDUCTIVITY (EPA 9050)	G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
			G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
L90249012	6-SEP-1990	CONDUCTIVITY (EPA 9050)	G-9024220-036
			G-9024220-038
			G-9024220-040
			G-9024220-042
			G-9024220-045
L90249024	6-SEP-1990	MERCURY (EPA 7471)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-012
			G-9024220-014
			G-9024220-015
			G-9024220-016
L90250009	6-SEP-1990	PH (EPA 9045)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
L90250010	6-SEP-1990	PH (EPA 9045)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
L90250011	6-SEP-1990	PH (EPA 9045)	G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-040
			G-9024220-042
			G-9024220-045
L90250012	6-SEP-1990	PH/STLC-DI (EPA 9045)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
L90250013	6-SEP-1990	PH/STLC-DI (EPA 9045)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
L90250014	6-SEP-1990	PH/STLC-DI (EPA 9045)	G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
			G-9024220-042
			G-9024220-045
L90250033	7-SEP-1990	FLUORIDE, STLC (EPA 340.2)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018

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Gerald Kimble
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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-019
			G-9024220-020
L90250034	7-SEP-1990	FLUORIDE, STLC (EPA 340.2)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
L90250035	7-SEP-1990	FLUORIDE, STLC (EPA 340.2)	G-9024220-042
			G-9024220-045
L90250039	7-SEP-1990	SELENIUM (EPA 7741)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
L90252003	9-SEP-1990	ARSENIC (EPA 7061)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
L90254002	10-SEP-1990	TDS/STLC-DI (EPA 160.1)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
L90254003	10-SEP-1990	TDS/STLC-DI (EPA 160.1)	G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
			G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
L90254004	10-SEP-1990	TDS/STLC-DI (EPA 160.1)	G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
			G-9024220-042
			G-9024220-045
L90254006	10-SEP-1990	ARSENIC (EPA 7061)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026

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Approved

PMCOBUS0106139

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
L90254007	10-SEP-1990	ARSENIC (EPA 7061)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
			G-9024220-042
			G-9024220-045
L90254033	11-SEP-1990	MERCURY (EPA 7471)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
			G-9024220-042
			G-9024220-045
L90255008	11-SEP-1990	SELENIUM (EPA 7741)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
			G-9024220-042
			G-9024220-045
L90255009	11-SEP-1990	SELENIUM (EPA 7741)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
L90255012	11-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-042
			G-9024220-045
		BARIUM (EPA 6010)	G-9024220-042
			G-9024220-045

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		BERYLLIUM (EPA 6010)	G-9024220-042
			G-9024220-045
		CADMIUM (EPA 6010)	G-9024220-042
			G-9024220-045
		CHROMIUM (EPA 6010)	G-9024220-042
			G-9024220-045
		COBALT (EPA 6010)	G-9024220-042
			G-9024220-045
		COPPER (EPA 6010)	G-9024220-042
			G-9024220-045
		LEAD (EPA 6010)	G-9024220-042
			G-9024220-045
		MOLYBDENUM (EPA 6010)	G-9024220-042
			G-9024220-045
		NICKEL (EPA 6010)	G-9024220-042
			G-9024220-045
		SILVER (EPA 6010)	G-9024220-042
			G-9024220-045
		THALLIUM (EPA 6010)	G-9024220-042
			G-9024220-045
		VANADIUM (EPA 6010)	G-9024220-042
			G-9024220-045
		ZINC (EPA 6010)	G-9024220-042
			G-9024220-045
L90256020	7-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		BARIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		BERYLLIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		CADMIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		CHROMIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-014
			G-9024220-015
			G-9024220-016
		COBALT (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		COPPER (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		LEAD (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		MOLYBDENUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		NICKEL (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		SILVER (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		THALLIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		VANADIUM (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
		ZINC (EPA 6010)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
L90256026	7-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		BARIUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		BERYLLIUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		CADMIUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		CHROMIUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		COBALT (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		COPPER (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		LEAD (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		MOLYBDENUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		NICKEL (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		SILVER (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		THALLIUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		VANADIUM (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		ZINC (EPA 6010)	G-9024220-017
			G-9024220-018
			G-9024220-019

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-020
L90256027	12-SEP-1990	ARSENIC (EPA 7061-L)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
L90256028	12-SEP-1990	ARSENIC (EPA 7061-L)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
L90256029	12-SEP-1990	ARSENIC (EPA 7061-L)	G-9024220-042
			G-9024220-045
L90257013	13-SEP-1990	CHROMIUM HEX/STLC-DI H2O (EPA 7196)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
L90257014	13-SEP-1990	CHROMIUM HEX/STLC-DI H2O (EPA 7196)	G-9024220-013 G-9024220-014 G-9024220-015 G-9024220-016 G-9024220-017 G-9024220-018 G-9024220-019 G-9024220-020 G-9024220-025 G-9024220-026 G-9024220-027 G-9024220-028 G-9024220-029 G-9024220-030 G-9024220-031 G-9024220-032 G-9024220-033 G-9024220-034 G-9024220-035 G-9024220-036 G-9024220-037 G-9024220-038 G-9024220-039 G-9024220-040 G-9024220-041 G-9024220-042 G-9024220-043 G-9024220-044
L90257015	13-SEP-1990	CHROMIUM HEX/STLC DI H2O (EPA 7196)	G-9024220-021 G-9024220-022 G-9024220-023 G-9024220-024 G-9024220-045 G-9024220-046
L90257019	13-SEP-1990	ANTIMONY (EPA 6010-L)	G-9024220-001 G-9024220-002 G-9024220-003 G-9024220-004 G-9024220-005 G-9024220-006 G-9024220-007 G-9024220-008 G-9024220-009 G-9024220-010 G-9024220-011 G-9024220-012 G-9024220-013 G-9024220-014 G-9024220-015 G-9024220-016 G-9024220-017 G-9024220-018 G-9024220-019 G-9024220-020

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		CHROMIUM (EPA 6010-L)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		COPPER (EPA 6010-L)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		MOLYBDENUM (EPA 6010-L)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
		ZINC (EPA 6010-L)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
L90257022	13-SEP-1990	ANTIMONY (EPA 6010-L)	G-9024220-042
			G-9024220-045
		CHROMIUM (EPA 6010-L)	G-9024220-042
			G-9024220-045
		COPPER (EPA 6010-L)	G-9024220-042
			G-9024220-045
		MOLYBDENUM (EPA 6010-L)	G-9024220-042
			G-9024220-045
		ZINC (EPA 6010-L)	G-9024220-042
			G-9024220-045

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
L90257023	13-SEP-1990	ANTIMONY (EPA 6010-L)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		CHROMIUM (EPA 6010-L)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		COPPER (EPA 6010-L)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		MOLYBDENUM (EPA 6010-L)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		ZINC (EPA 6010-L)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
L90257024	12-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		BARIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		BERYLLIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		CADMIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		CHROMIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		COBALT (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		COPPER (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		LEAD (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		MOLYBDENUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		NICKEL (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		SILVER (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		THALLIUM (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		VANADIUM (EPA 6010)	G-9024220-036
			G-9024220-038
			G-9024220-040
			G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
		ZINC (EPA 6010)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
L90260001	10-SEP-1990	MERCURY (EPA 7471)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040

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Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
L90261019	18-SEP-1990	CHROMIUM, HEX/TTLG (EPA 7196)	G-9024220-001
			G-9024220-002
			G-9024220-003
			G-9024220-004
			G-9024220-005
			G-9024220-006
			G-9024220-007
			G-9024220-008
			G-9024220-009
			G-9024220-010
			G-9024220-011
			G-9024220-012
			G-9024220-013
			G-9024220-014
			G-9024220-015
			G-9024220-016
			G-9024220-017
			G-9024220-018
			G-9024220-019
			G-9024220-020
L90261020	18-SEP-1990	CHROMIUM, HEX/TTLG (EPA 7196)	G-9024220-021
			G-9024220-022
			G-9024220-023
			G-9024220-024
			G-9024220-025
			G-9024220-026
			G-9024220-027
			G-9024220-028
			G-9024220-029
			G-9024220-030
			G-9024220-032
			G-9024220-034
			G-9024220-036
			G-9024220-038
			G-9024220-040
L90261021	18-SEP-1990	CHROMIUM, HEX/TTLG (EPA 7196)	G-9024220-042
			G-9024220-045

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN
Project: (1352) PG & E - TOPOCK

Analysis No.: G-9024220-031/039
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Matrix Spike/Matrix Spike Duplicate Report

Sample Number	Parameter (Method)	Units	Observed Concentration Sample	MS	MSD	Amt. Spiked	% Recovery MS	MSD	Avg.	% RPD
9024220-027	FLUORIDE (EPA 340.2)	mg/L	10.2	31.5	31.7	20.0	107	108	107	1
9024220-046	FLUORIDE (EPA 340.2)	mg/L	38.5	58.9	59.2	20.0	102	104	103	2
9024220-021	ANTIMONY (EPA 6010)	mg/kg	0.072	230	219	250	92	88	90	5
9024220-017	ANTIMONY (EPA 6010)	mg/kg	ND	179	167	250	72	67	69	7
9024220-021	BARIUM (EPA 6010)	mg/kg	41.8	957	931	1000	92	89	90	3
9024220-017	BARIUM (EPA 6010)	mg/kg	197	982	944	1000	79	75	77	5
9024220-021	BERYLLIUM (EPA 6010)	mg/kg	0.0967	25.0	24.0	25	100	96	98	4
9024220-017	BERYLLIUM (EPA 6010)	mg/kg	0.122	20.2	19.9	25	80	79	80	2
9024220-021	CADMIUM (EPA 6010)	mg/kg	ND	21.4	20.6	25	86	82	84	4
9024220-017	CADMIUM (EPA 6010)	mg/kg	0.0981	16.6	16.8	25	66	67	66	1
9024220-021	CHROMIUM (EPA 6010)	mg/kg	2.78	87.2	83.5	100	84	81	83	5
9024220-017	CHROMIUM (EPA 6010)	mg/kg	7.21	79.9	75.3	100	73	68	70	7
9024220-021	COBALT (EPA 6010)	mg/kg	1.44	218	208	250	87	83	85	5
9024220-017	COBALT (EPA 6010)	mg/kg	4.00	175	174	250	68	68	68	1
9024220-021	COPPER (EPA 6010)	mg/kg	2.68	120	118	125	94	92	93	2
9024220-017	COPPER (EPA 6010)	mg/kg	7.03	111	109	125	83	82	82	2
9024220-021	LEAD (EPA 6010)	mg/kg	1.94	214	203	250	85	80	83	5
9024220-017	LEAD (EPA 6010)	mg/kg	1.22	161	160	250	64	64	64	1
9024220-021	MOLYBDENUM (EPA 6010)	mg/kg	0.340	112	106	125	89	85	87	6
9024220-017	MOLYBDENUM (EPA 6010)	mg/kg	0.581	91.5	90.0	125	73	72	72	2
9024220-021	NICKEL (EPA 6010)	mg/kg	3.36	218	207	250	86	82	84	5
9024220-017	NICKEL (EPA 6010)	mg/kg	5.40	176	176	250	68	68	68	0
9024220-021	SILVER (EPA 6010)	mg/kg	0.059	20	19.3	25	80	77	78	4
9024220-017	SILVER (EPA 6010)	mg/kg	0.261	17.8	17.6	25	70	69	70	1
9024220-021	THALLIUM (EPA 6010)	mg/kg	1.72	22.4	21.6	25	83	80	81	4
9024220-017	THALLIUM (EPA 6010)	mg/kg	6.08	24.3	24.4	25	73	73	73	1
9024220-021	VANADIUM (EPA 6010)	mg/kg	4.52	226	217	250	89	85	87	4
9024220-017	VANADIUM (EPA 6010)	mg/kg	17.6	204	203	250	75	74	74	1
9024220-021	ZINC (EPA 6010)	mg/kg	8.22	232	220	250	90	85	87	6
9024220-017	ZINC (EPA 6010)	mg/kg	22.2	197	199	250	70	71	70	1
9024220-017	ARSENIC (EPA 7061)	mg/kg	2.2	20.0	20.0	25.0	71	71	71	0
9024220-021	ARSENIC (EPA 7061)	mg/kg	0.50	18.5	16.5	25.0	72	64	68	12
9025027-004	CHROMIUM, HEX/TTLC (EPA 7196)	mg/kg	ND	0.32	0.35	0.50	64	70	67	9
9024220-032	CHROMIUM, HEX/TTLC (EPA 7196)	mg/kg	ND	0.37	0.35	0.50	74	70	72	6
9024220-021	MERCURY (EPA 7471)	mg/kg	0.007	0.178	0.186	0.175	98	102	100	5
9024220-017	MERCURY (EPA 7471)	mg/kg	ND	0.175	0.172	0.175	100	98	99	2
9024220-021	SELENIUM (EPA 7741)	mg/kg	ND	9.75	8.50	12.5	78	68	73	14
9024220-017	SELENIUM (EPA 7741)	mg/kg	ND	10.25	8.25	12.5	82	66	74	22

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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-039
9024220-027	7-SEP-1990	FLUORIDE (EPA 340.2)	G-9024220-031 G-9024220-033 G-9024220-035 G-9024220-037 G-9024220-039
9024220-032	18-SEP-1990	CHROMIUM, HEX/TTLC (EPA 7196) 74,70	G-9024220-031 G-9024220-033 G-9024220-035 G-9024220-037 G-9024220-039
9024220-046	7-SEP-1990	FLUORIDE (EPA 340.2)	G-9024220-041 G-9024220-043 G-9024220-044 G-9024220-046
9025027-004	18-SEP-1990	CHROMIUM, HEX/TTLC (EPA 7196) 74,70	G-9024220-041 G-9024220-043 G-9024220-044 G-9024220-046

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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
9024220-017	11-SEP-1990	ANTIMONY (EPA 6010) — MS out 72,67	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		BARIUM (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		BERYLLIUM (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		CADMIUM (EPA 6010) 66,67	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		CHROMIUM (EPA 6010) 73,68	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		COBALT (EPA 6010) 68,68	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		COPPER (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		LEAD (EPA 6010) 64,64	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		MOLYBDENUM (EPA 6010) 73,72	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		NICKEL (EPA 6010) 68,68	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		SILVER (EPA 6010) 70,69	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		THALLIUM (EPA 6010) 73,77	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		VANADIUM (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044

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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		ZINC (EPA 6010) 70,71	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		ARSENIC (EPA 7061) 71,71	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		MERCURY (EPA 7471)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		SELENIUM (EPA 7741)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
9024220-021	14-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		BARIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		BERYLLIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		CADMIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		CHROMIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		COBALT (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		COPPER (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035

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DHS Certificate #157

Matrix Spike/Matrix Spike Duplicate Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-037
			G-9024220-039
		LEAD (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		MOLYBDENUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		NICKEL (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		SILVER (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		THALLIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		VANADIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		ZINC (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		ARSENIC (EPA 7061) 72, 64	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		MERCURY (EPA 7471)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		SELENIUM (EPA 7741)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037

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DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN
Project: (1352) PG & E - TOPOGK

Analysis No.: G-9024220-031/039
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Laboratory Control Sample Report

QC Batch	Parameter (Method)	Amt. Spiked	Units	Avg. Spike Recov.	Acceptable Range	Rel. Pct. Diff.	Acceptable Range
L90254004	TDS/STLC-DI (EPA 160.1)	270.9	mg/L	120.	70-120	9.	30
L90250034	FLUORIDE, STLC (EPA 340.2)	2.00	mg/L	96.	69-125	6.	17
L90250035	FLUORIDE, STLC (EPA 340.2)	2.00	mg/L	94.	69-125	3.	17
L90262003	ANTIMONY (EPA 6010)	1.0	mg/kg	101.	60-125	11.	25
L90257024	ANTIMONY (EPA 6010)	1.0	mg/kg	98.	60-125	2.	25
L90255012	ANTIMONY (EPA 6010)	1.0	mg/kg	95.	60-125	1.	25
L90257024	BARIUM (EPA 6010)	1.0	mg/kg	98.	65-125	1.	30
L90262003	BARIUM (EPA 6010)	1.0	mg/kg	105.	65-125	10.	30
L90255012	BARIUM (EPA 6010)	1.0	mg/kg	95.	65-125	0.	30
L90262003	BERYLLIUM (EPA 6010)	1.0	mg/kg	103.	60-126	11.	30
L90257024	BERYLLIUM (EPA 6010)	1.0	mg/kg	96.	60-126	2.	30
L90255012	BERYLLIUM (EPA 6010)	1.0	mg/kg	95.	60-126	1.	30
L90257024	CADMIUM (EPA 6010)	1.0	mg/kg	86.	63-126	2.	25
L90262003	CADMIUM (EPA 6010)	1.0	mg/kg	95.	63-126	11.	25
L90255012	CADMIUM (EPA 6010)	1.0	mg/kg	91.	63-126	0.	25
L90262003	CHROMIUM (EPA 6010)	1.0	mg/kg	97.	63-126	9.	30
L90257024	CHROMIUM (EPA 6010)	1.0	mg/kg	98.	63-126	2.	30
L90255012	CHROMIUM (EPA 6010)	1.0	mg/kg	95.	63-126	0.	30
L90257024	COBALT (EPA 6010)	1.0	mg/kg	91.	63-126	4.	35
L90262003	COBALT (EPA 6010)	1.0	mg/kg	95.	63-126	10.	35
L90255012	COBALT (EPA 6010)	1.0	mg/kg	91.	63-126	0.	35
L90262003	COPPER (EPA 6010)	1.0	mg/kg	103.	62-126	9.	30
L90257024	COPPER (EPA 6010)	1.0	mg/kg	100.	62-126	0.	30
L90255012	COPPER (EPA 6010)	1.0	mg/kg	94.	62-126	0.	30
L90257024	LEAD (EPA 6010)	1.0	mg/kg	92.	61-126	4.	30
L90262003	LEAD (EPA 6010)	1.0	mg/kg	94.	61-126	12.	30
L90255012	LEAD (EPA 6010)	1.0	mg/kg	91.	61-126	2.	30
L90262003	MOLYBDENUM (EPA 6010)	1.0	mg/kg	97.	61-126	10.	32
L90257024	MOLYBDENUM (EPA 6010)	1.0	mg/kg	94.	61-126	3.	32
L90255012	MOLYBDENUM (EPA 6010)	1.0	mg/kg	92.	61-126	1.	32
L90257024	NICKEL (EPA 6010)	1.0	mg/kg	95.	61-126	3.	25
L90262003	NICKEL (EPA 6010)	1.0	mg/kg	100.	61-126	10.	25
L90255012	NICKEL (EPA 6010)	1.0	mg/kg	96.	61-126	0.	25
L90262003	SILVER (EPA 6010)	1.0	mg/kg	86.	60-126	12.	30
L90257024	SILVER (EPA 6010)	1.0	mg/kg	94.	60-126	0.	30
L90255012	SILVER (EPA 6010)	1.0	mg/kg	88.	60-126	0.	30
L90257024	THALLIUM (EPA 6010)	1.0	mg/kg	90.	60-126	2.	30
L90262003	THALLIUM (EPA 6010)	1.0	mg/kg	95.	60-126	12.	30
L90255012	THALLIUM (EPA 6010)	1.0	mg/kg	92.	60-126	1.	30

Reviewed

Approved

PMCOBUS0106163

Enseco

DHS Certificate #157

Laboratory Report

MITTELHAUSER CORP
23272 MILL CREEK RD, STE 300
LAGUNA HILLS, CA 92653
ATTN: MR. DAVE DORN
Project: (1352) PG & E - TOPOCK

Analysis No.: G-9024220-031/039
Date Sampled: 29-AUG-1990
Date Sample Rec'd: 30-AUG-1990
Sample Type: SLUDGE

Laboratory Control Sample Report

QC Batch	Parameter (Method)	Amt. Spiked	Units	Avg. Spike Recov.	Acceptable Range	Rel. Pct. Diff.	Acceptable Range
L90262003	VANADIUM (EPA 6010)	1.0	mg/kg	95.	60-126	10.	25
L90257024	VANADIUM (EPA 6010)	1.0	mg/kg	91.	60-126	1.	25
L90255012	VANADIUM (EPA 6010)	1.0	mg/kg	89.	60-126	0.	25
L90257024	ZINC (EPA 6010)	1.0	mg/kg	92.	60-126	4.	30
L90262003	ZINC (EPA 6010)	1.0	mg/kg	95.	60-126	11.	30
L90255012	ZINC (EPA 6010)	1.0	mg/kg	91.	60-126	1.	30
L90257023	ANTIMONY (EPA 6010-L)	2.0	mg/L	94.	70-130	9.	30
L90257022	ANTIMONY (EPA 6010-L)	2.0	mg/L	96.	70-130	3.	30
L90257023	CHROMIUM (EPA 6010-L)	2.0	mg/L	94.	71-123	8.	20
L90257022	CHROMIUM (EPA 6010-L)	2.0	mg/L	96.	71-123	2.	20
L90257023	COPPER (EPA 6010-L)	2.0	mg/L	96.	62-126	5.	30
L90257022	COPPER (EPA 6010-L)	2.0	mg/L	90.	62-126	6.	30
L90257023	MOLYBDENUM (EPA 6010-L)	2.0	mg/L	94.	69-124	8.	20
L90257022	MOLYBDENUM (EPA 6010-L)	2.0	mg/L	95.	69-124	1.	20
L90257023	ZINC (EPA 6010-L)	2.0	mg/L	88.	70-128	10.	20
L90257022	ZINC (EPA 6010-L)	2.0	mg/L	83.	70-128	3.	20
L90254006	ARSENIC (EPA 7061)	1.00	mg/kg	86.	50-127	5.	25
L90254007	ARSENIC (EPA 7061)	1.00	mg/kg	85.	50-127	7.	25
L90256028	ARSENIC (EPA 7061-L)	2.0	mg/L	93.	78-120	0.	20
L90256029	ARSENIC (EPA 7061-L)	2.0	mg/L	100.	78-120	0.	20
L90261021	CHROMIUM, HEX/TTLC (EPA 7196)	1.00	mg/kg	100.	60-130	2.	40
L90261020	CHROMIUM, HEX/TTLC (EPA 7196)	1.0	mg/kg	97.	60-130	9.	40
L90260001	MERCURY (EPA 7471)	0.002	mg/kg	108.	51-125	5.	42
L90254033	MERCURY (EPA 7471)	.0020	mg/kg	95.	51-125	11.	42
L90255009	SELENIUM (EPA 7741)	1.00	mg/kg	84.	45-128	8.	40
L90255008	SELENIUM (EPA 7741)	1.00	mg/kg	92.	45-128	1.	40
L90250011	PH (EPA 9045)	9.183	units	101.	98-102	0.	1
L90250014	PH/STLC-DI (EPA 9045)	9.183	units	101.	98-102	0.	1
L90249012	CONDUCTIVITY (EPA 9050)	1465	uohm/cm	96.	80-120	0.	20
L90249011	CONDUCTIVITY (EPA 9050)	1465	uohm/cm	95.	80-120	1.	20

Reviewed

Gerald Kimble
Approved

PMCOBUS0106164

Enseco

DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
L90249011	6-SEP-1990	CONDUCTIVITY (EPA 9050)	G-9024220-031 G-9024220-033
L90249012	6-SEP-1990	CONDUCTIVITY (EPA 9050)	G-9024220-035 G-9024220-037 G-9024220-039 G-9024220-041 G-9024220-043 G-9024220-044 G-9024220-046
L90250011	6-SEP-1990	PH (EPA 9045)	G-9024220-031 G-9024220-033 G-9024220-035 G-9024220-037 G-9024220-039 G-9024220-041 G-9024220-043 G-9024220-044 G-9024220-046
L90250014	6-SEP-1990	PH/STLC-DI (EPA 9045)	G-9024220-031 G-9024220-033 G-9024220-035 G-9024220-037 G-9024220-039 G-9024220-041 G-9024220-043 G-9024220-044 G-9024220-046
L90250034	7-SEP-1990	FLUORIDE, STLC (EPA 340.2)	G-9024220-031 G-9024220-033 G-9024220-035 G-9024220-037 G-9024220-039
L90250035	7-SEP-1990	FLUORIDE, STLC (EPA 340.2)	G-9024220-041 G-9024220-043 G-9024220-044 G-9024220-046
L90254004	10-SEP-1990	TDS/STLC-DI (EPA 160.1)	G-9024220-031 G-9024220-033 G-9024220-035 G-9024220-037 G-9024220-039 G-9024220-041 G-9024220-043 G-9024220-044 G-9024220-046

Reviewed

Approved

PMCOBUS0106165

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A Corning Company

DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
L90254006	10-SEP-1990	ARSENIC (EPA 7061)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
L90254007	10-SEP-1990	ARSENIC (EPA 7061)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
L90254033	11-SEP-1990	MERCURY (EPA 7471)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
L90255008	11-SEP-1990	SELENIUM (EPA 7741)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
L90255009	11-SEP-1990	SELENIUM (EPA 7741)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
L90255012	11-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		BARIUM (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		BERYLLIUM (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		CADMIUM (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		CHROMIUM (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		COBALT (EPA 6010)	G-9024220-041
			G-9024220-043
			G-9024220-044

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PMCOBUS0106166

Enseco

DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
		COPPER (EPA 6010)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		LEAD (EPA 6010)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		MOLYBDENUM (EPA 6010)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		NICKEL (EPA 6010)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		SILVER (EPA 6010)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		THALLIUM (EPA 6010)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		VANADIUM (EPA 6010)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
		ZINC (EPA 6010)	G-9024220-046
			G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
L90256028	12-SEP-1990	ARSENIC (EPA 7061-L)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
L90256029	12-SEP-1990	ARSENIC (EPA 7061-L)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
L90257022	13-SEP-1990	ANTIMONY (EPA 6010-L)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		CHROMIUM (EPA 6010-L)	G-9024220-041
			G-9024220-043

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-044
			G-9024220-046
		COPPER (EPA 6010-L)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		MOLYBDENUM (EPA 6010-L)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
		ZINC (EPA 6010-L)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
L90257023	13-SEP-1990	ANTIMONY (EPA 6010-L)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		CHROMIUM (EPA 6010-L)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		COPPER (EPA 6010-L)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		MOLYBDENUM (EPA 6010-L)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
		ZINC (EPA 6010-L)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
L90257024	12-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		BARIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		BERYLLIUM (EPA 6010)	G-9024220-031
			G-9024220-033

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DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-035
			G-9024220-037
		CADMIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		CHROMIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		COBALT (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		COPPER (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		LEAD (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		MOLYBDENUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		NICKEL (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		SILVER (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		THALLIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		VANADIUM (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
		ZINC (EPA 6010)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
001	10-SEP-1990	MERCURY (EPA 7471)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037

Reviewed

Jerol Kimble
Approved

PMCOBUS0106169

Enseco
A CORNING COMPANY

DHS Certificate #157

Laboratory Control Sample Report Cross-Reference

QC Batch	Date	Parameter (Method)	Sample Nos.
			G-9024220-039
L90261020	18-SEP-1990	CHROMIUM, HEX/TTLC (EPA 7196)	G-9024220-031
			G-9024220-033
			G-9024220-035
			G-9024220-037
			G-9024220-039
L90261021	18-SEP-1990	CHROMIUM, HEX/TTLC (EPA 7196)	G-9024220-041
			G-9024220-043
			G-9024220-044
			G-9024220-046
L90262003	14-SEP-1990	ANTIMONY (EPA 6010)	G-9024220-039
		BARIUM (EPA 6010)	G-9024220-039
		BERYLLIUM (EPA 6010)	G-9024220-039
		CADMIUM (EPA 6010)	G-9024220-039
		CHROMIUM (EPA 6010)	G-9024220-039
		COBALT (EPA 6010)	G-9024220-039
		COPPER (EPA 6010)	G-9024220-039
		LEAD (EPA 6010)	G-9024220-039
		MOLYBDENUM (EPA 6010)	G-9024220-039
		NICKEL (EPA 6010)	G-9024220-039
		SILVER (EPA 6010)	G-9024220-039
		THALLIUM (EPA 6010)	G-9024220-039
		VANADIUM (EPA 6010)	G-9024220-039
		ZINC (EPA 6010)	G-9024220-039

Reviewed

Approved

PMCOBUS0106170

PMCOBUS0106170

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-1	G-9024220-001 B-1-1	28 AUG 90
09-001-2	G-9024220-002 B-1-2	28 AUG 90
09-001-3	G-9024220-003 B-1-3	28 AUG 90
09-001-4	G-9024220-004 B-1-4	28 AUG 90
09-001-5	G-9024220-005 B-1-5	28 AUG 90

PARAMETER	09-001-1	09-001-2	09-001-3	09-001-4	09-001-5
Total Fluorides, mg/kg	150	130	180	210	130

PMCOBUS0106171

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

B C Analytical

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-6	G-9024220-006 B-1-6	28 AUG 90
09-001-7	G-9024220-007 B-1-7	28 AUG 90
09-001-8	G-9024220-008 B-2-1	28 AUG 90
09-001-9	G-9024220-009 B-2-2	28 AUG 90
09-001-10	G-9024220-010 B-2-3	28 AUG 90

PARAMETER	09-001-6	09-001-7	09-001-8	09-001-9	09-001-10
Total Fluorides, mg/kg	110	280	110	190	200

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

B C Analytical

PMCOBUS0106172

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-11	G-9024220-011 B-2-4	28 AUG 90
09-001-12	G-9024220-012 B-2-5	28 AUG 90
09-001-13	G-9024220-013 B-2-6	28 AUG 90
09-001-14	G-9024220-014 B-2-7	28 AUG 90
09-001-15	G-9024220-015 B-2-8	28 AUG 90

PARAMETER	09-001-11	09-001-12	09-001-13	09-001-14	09-001-15
Total Fluorides, mg/kg	240	92	90	110	87

PMCOBUS0106173

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

B C Analytical

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-16	G-9024220-016 B-3-1	28 AUG 90
09-001-17	G-9024220-017 B-3-2	28 AUG 90
09-001-18	G-9024220-018 B-3-3	28 AUG 90
09-001-19	G-9024220-019 B-3-4	28 AUG 90
09-001-20	G-9024220-020 B-3-5	28 AUG 90

PARAMETER	09-001-16	09-001-17	09-001-18	09-001-19	09-001-20
Total Fluorides, mg/kg	140	130	150	270	170

1253 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

B C Analytical

PMCOBUS0106174

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-21	G-9024220-021 B-3-6	28 AUG 90
09-001-22	G-9024220-022 B-3-7	28 AUG 90
09-001-23	G-9024220-023 B-4-1	28 AUG 90
09-001-24	G-9024220-024 B-4-2	28 AUG 90
09-001-25	G-9024220-025 B-4-3	28 AUG 90

PARAMETER	09-001-21	09-001-22	09-001-23	09-001-24	09-001-25
Total Fluorides, mg/kg	74	79	87	170	120

PMCOBUS0106175

1255 Powell Street
Emeryville, CA 94608

415/428-2309
Fax: 415/547-3643

B C Analytical

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-26	G-9024220-026 B-4-4	28 AUG 90
09-001-27	G-9024220-027 B-4-5	28 AUG 90
09-001-28	G-9024220-028 B-4-6	28 AUG 90
09-001-29	G-9024220-029 B-4-7	28 AUG 90
09-001-30	G-9024220-030 B-4-8	28 AUG 90

PARAMETER	09-001-26	09-001-27	09-001-28	09-001-29	09-001-30
Total Fluorides, mg/kg	210	250	160	52	47

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

B C Analytical

PMCOBUS0106176

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-31	G-9024220-031 1352-20-28	29 AUG 90
09-001-32	G-9024220-032 1352-20-29	29 AUG 90
09-001-33	G-9024220-033 1352-20-30	29 AUG 90
09-001-34	G-9024220-034 1352-20-31	29 AUG 90
09-001-35	G-9024220-035 1352-20-32	29 AUG 90

PARAMETER	09-001-31	09-001-32	09-001-33	09-001-34	09-001-35
Total Fluorides, mg/kg	2700	82	3200	59	2900

PMCOBUS0106177

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

B C Analytical

Analytical Report

LOG NO: B90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-36	G-9024220-036 1352-20-33	29 AUG 90
09-001-37	G-9024220-037 1352-20-34	29 AUG 90
09-001-38	G-9024220-038 1352-20-35	29 AUG 90
09-001-39	G-9024220-039 1352-20-36	29 AUG 90
09-001-40	G-9024220-40 1352-20-37	29 AUG 90

PARAMETER	09-001-36	09-001-37	09-001-38	09-001-39	09-001-40
Total Fluorides, mg/kg	72	2600	77	3300	1800

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415/428-2300
Fax: 415/547-3643

B C Analytical

PMCOBUS0106178

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-41	G-9024220-41 1352-20-38	29 AUG 90
09-001-42	G-9024220-42 1352-20-39	29 AUG 90
09-001-43	G-9024220-43 1352-20-40	29 AUG 90
09-001-44	G-9024220-44 1352-20-41	29 AUG 90
09-001-45	G-9024220-45 1352-20-42	29 AUG 90

PARAMETER	09-001-41	09-001-42	09-001-43	09-001-44	09-001-45
Total Fluorides, mg/kg	4300	330	2200	2700	76

PMCOBUS0106179

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

B C Analytical

Analytical Report

LOG NO: E90-09-001

Received: 04 SEP 90
Reported: 24 SEP 90

Mr. Kevin Dodds
Enseco
7440 Lincoln Way
Garden Grove, California 92641

Requisition: G-9024220
Project: Mittelhauser #1352

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-001-46	G-9024220-46 1352-20-43	29 AUG 90

PARAMETER	09-001-46
Total Fluorides, mg/kg	2600

Sim D. Lessley, Ph.D., Laboratory Director

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

B C Analytical

PMCOBUS0106180

10. BROWN & CALDWELL

Enseco
A CORNING Company

☐ 7440 Lincoln Way, Garden Grove, CA 92641, (714) 898 6370
☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442 8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 8/31 Page 1 of 5

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME
MITTELHAUSER # 1352 / PG & E - TOPOCK

CONTRACT / PURCHASE ORDER / ~~QUOTE #~~
G.9024220 / /

PROJECT MANAGER
KEVIN DODDS

PHONE NUMBER
714-898-4370

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	FLUORIDE (340.2)							Sample Condition/ REMARKS
(G.9024220-001) B-1-1	8/28					✓	1	✓							
002 2															
003 3															
004 4															
005 5															
006 6															
007 7															
008 B-2-1															
009 2															
010 3															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature) [signature]	Received by: (Signature) FED EX	Date 8/31	Time 1750
Relinquished by: (Signature) FED EX	Date / Time / Received for Laboratory by: [signature]	Date RECEIVED 9/1/90	Time 9:00

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Method of Shipment:
FEDEX AB # 8084433976

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106181

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☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
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☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442 8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 5/31/90 Page 2 of 5
Lab Number

CLIENT ENSECO/CRL
ADDRESS
PROJECT NAME
CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER
PHONE NUMBER
SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2)							Sample Condition/ REMARKS
(G-9024220-011) B-2-4	8/29					✓	1	✓							
012 5															
013 6															
014 7															
015 8															
016 B-3-1															
017 2															
018 3															
019 4															
020 5															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature) FED EX	Date 6/1	Time 1130
Relinquished by: (Signature) FED EX	Date / Time / Received for Laboratory by:	Date RECEIVED 6/4/90	Time 2 PM
		Date ACCEPTED	Time

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106182

PMCOBUS0106182

Enseco
A CORNING Company

[illegible] Garden Grove, CA 92641, (714) 898 6370
☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442 8400
☐ Mobile Labs, (800) ENSECO 6

CHAIN OF CUSTODY RECORD

Date 8/31/90 Page 3 of 5

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES: F (7421.2)

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (7421.2)							Sample Condition/ REMARKS
(G-9024220-021) B-3-6	8/28					✓	8/25	✓							
022 ↓ 7															
023 B-4-1															
024 2															
025 3															
026 4															
027 5															
028 6															
029 7															
030 8															

SAMPLERS: (Signature)

Received by: (Signature) | Date | Time

Relinquished by: (Signature) [signature]

Received by: (Signature) FED EX | Date 8/31 | Time 1750

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Relinquished by: (Signature) FED. EX | Date | Time

Received for Laboratory by: [signature] | Date 9/1/90 | RECEIVED Time 9:00 | Date | ACCEPTED Time

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106183

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☐ Mobile Labs, (800) ENSECO-6

CHAIN OF CUSTODY RECORD

Date 8/31/90 Page 4 of 5
Lab Number

CLIENT ENSECO/CRL
ADDRESS
PROJECT NAME
CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER
PHONE NUMBER
SITE CONTACT

ANALYSES: F (3000?)

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (3000?)							Sample Condition/ REMARKS
(G-90242.20-031) 1352-20-28	8/29					✓	1	✓							
032 29															
033 30															
034 31															
035 32															
036 33															
037 34															
038 35															
039 36															
040 37															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature) [signature]	Received by: (Signature) FED EX	Date 8/31	Time 1730
Relinquished by: (Signature) FED EX	Received for Laboratory by: [signature]	Date RECEIVED 9/4/90	Time 8:02

Date ACCEPTED Time

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106184

Enseco
A CORNING Company

☒ 7440 Lincoln Way, Garden Grove, CA 92641, (714) 898 6370
☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
☐ 9537 Telstar Ave., Unit 116, El Monte, CA 91731, (818) 442-8400
☐ Mobile Labs, (800) ENSECO-B

CHAIN OF CUSTODY RECORD

Date 8/31/90 Page 5 of 5

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2)							Sample Condition/ REMARKS
(G-9024220-041) 1352-20-38	8/29					✓	1	✓							
042 39															
043 40															
044 41															
045 42															
046 43															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature) [signature]	Received by: (Signature) FED EX	8/31	1752

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Relinquished by: (Signature)	Date	Time	Received for Laboratory by:	Date RECEIVED	Time	Date ACCEPTED	Time
FED EX			[signature]	9/4/90	9:02		

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106185

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1352

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONARO / [signature] WAYNE CHIOU / [signature]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4A	4C	5A	5B	7B	9B	10	PRESERVATIVE	REMARKS
B-1-1	8/28/90	0815	SOIL	BORING #1	1	X	X	X	X	X	X		ICE	
B-1-2		0823		" "	1	X	X	X	X	X	X			
B-1-3		0827		" "	1	X	X	X	X	X	X			
B-1-4		0834		" "	1	X	X	X	X	X	X			
B-1-5		0845		" "	1	X	X	X	X	X	X			
B-1-6		0850		" "	1	X	X	X	X	X	X			
B-1-7		0900		" "	1	X	X	X	X	X	X			
B-2-1		0935		BORING #2	1	X	X	X	X	X	X			
B-2-2		0940		" "	1	X	X	X	X	X	X			
B-2-3		0945		" "	1	X	X	X	X	X	X			
B-2-4		0955		" "	1	X	X	X	X	X	X			
B-2-5		1000		" "	1	X	X	X	X	X	X			
B-2-6		1010		" "	1	X	X	X	X	X	X			
B-2-7		1015		" "	1	X	X	X	X	X	X			
B-2B		1020		" "	1	X	X	X	X	X	X			
B-3-1		1125		BORING #3	1	X	X	X	X	X	X			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY:
[signature]	8/29/90	1815	[signature]		ENSECO-CRL
RELINQUISHED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**LABORATORY CONTACT:**	**LABORATORY PHONE NUMBER:**
[signature]	8/29/90	7:20 AM.		MARK KING	(714) 898-6370
RELINQUISHED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED FOR LABORATORY BY: (SIGNATURE)**	**SAMPLE ANALYSIS REQUEST SHEET ATTACHED:**	
			[signature]	(X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106186

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 2 OF 3

PROJECT NUMBER: 1352

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) WAYNE CHIOU / Wayne Chiou

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4A, 4C	5A, 5B	7	8	9B	10	PRESERVATIVE	REMARKS
B-3-2	8/28/90	1130	SOIL	BORING #3	1	X	X	X	X	X	X	ICE	
B-3-3		1135		" "	1	X	X	X	X	X	X		
B-3-4		1143		" "	1	X	X	X	X	X	X		
B-3-5		1150		" "	1	X	X	X	X	X	X		
B-3-6		1205		" "	1	X	X	X	X	X	X		
B-3-7		1210		" "	1	X	X	X	X	X	X		
B-4-1		1245		BORING #4	1	X	X	X	X	X	X		
B-4-2		1255		" "	1	X	X	X	X	X	X		
B-4-3		1300		" "	1	X	X	X	X	X	X		
B-4-4		1310		" "	1	X	X	X	X	X	X		
B-4-5		1318		" "	1	X	X	X	X	X	X		
B-4-6		1330		" "	1	X	X	X	X	X	X		
B-4-7		1340		" "	1	X	X	X	X	X	X		
B-4-8		1345		" "	1	X	X	X	X	X	X		
1352-20-28	8/29/90	0855	SLUDGE	PZ-1	1	X	X	X	X	X	X		
1352-20-29	S	0905	SAND	PZ-1	1	X	X	X	X	X	X		

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY:
Wayne Chiou	8/30/90	[illegible]	Paul Alcantar		ENSECO-CRL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: MARK KING	LABORATORY PHONE NUMBER: (714) 898-6370
RELINQUISHED BY: (SIGNATURE) Paul Alcantar	DATE 8/30/90	TIME 7:20 PM	RECEIVED FOR LABORATORY BY: (SIGNATURE) [illegible]	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106187

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1352

PROJECT NAME: PG#E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) WAYN CHIOU / Wayne Chiou

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4A, 4C	3A, 5B	7	8	9B	10	PRESERVATIVE	REMARKS
1352-20-30	8/29/90	0840	SLUDGE	P2-1	1	X	X	X	X	X	X	ICE	
1352-20-31		0845	SAND	P2-2	1	X	X	X	X	X	X		
1352-20-32		0925	SLUDGE	P2-3	1	X	X	X	X	X	X		
1352-20-33		0930	SAND	P2-3	1	X	X	X	X	X	X		
1352-20-34		0945	SLUDGE	P2-4	1	X	X	X	X	X	X		
1352-20-35		0950	SAND	P2-4	1	X	X	X	X	X	X		
1352-20-36		1025	SLUDGE	P2-6	1	X	X	X	X	X	X		
1352-20-37		1030	SAND	P2-6	1	X	X	X	X	X	X		
1352-20-38		1609	SLUDGE	P4-1	1	X	X	X	X	X	X		
1352-20-39		1610	SAND	P4-1	1	X	X	X	X	X	X		
1352-20-40		1610	SLUDGE	P4-3	1	X	X	X	X	X	X		
1352-20-41		1655	SLUDGE	P4-5	1	X	X	X	X	X	X		
1352-20-42		1720	SAND	P4-5	1	X	X	X	X	X	X		
1352-20-43		1700	SLUDGE	P4-6	1	X	X	X	X	X	X		

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY:
Wayne Chiou	8/29/90	8:15	Phil Alcantar		ENSECO-CFL
RELINQUISHED BY: (SIGNATURE) Phil Alcantar	DATE 8/30/90	TIME 7:20 PM	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: MARK KING	LABORATORY PHONE NUMBER: (714) 898-6570
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106188

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 ATLAS CT., BAKERSFIELD, CALIFORNIA 93306 PHONE (805) 327-4911 FAX (805) 327-1918

MITTELHAUSER CORP
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 09/18/90
Date Received: 09/05/90
Laboratory No.: 7669-1

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #B-1-5D COLLECTED BY WAYNE CHIOU ON 8-28-90 AT 08:45 BORING NO. 1

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	None Detected	0.01	7060	1	5.0
Chromium	None Detected	0.01	6010	1	560.
Copper	0.03	0.01	6010	1	25.
Molybdenum	None Detected	0.05	6010	1	350.
Zinc	0.01	0.01	6010	1	250.
Fluorides	1.14	0.5	340.2	2	180.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0
pH	7.62	0.01	SW-904	S	
* Electrical Conductivity	0.54	0.1	SW-905	S	
Total Dissolved Solids	58.	10.	EPA-16	E	

* 1:1 extraction

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

BY J. J. Eglin
J.W. Eglin

PMCOBUS0106189

ENVIRONMENTAL
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LAGUNA HILLS, CA 92653

Date Reported: 09/18/90
Date Received: 09/05/90
Laboratory No.: 7669-2

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #B-2-6D COLLECTED BY WAYNE CHIOU ON 8-28-90 AT 10:10 BORING NO. 2

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	None Detected	0.01	7060	1	5.0
Chromium	None Detected	0.01	6010	1	560.
Copper	0.03	0.01	6010	1	25.
Molybdenum	None Detected	0.05	6010	1	350.
Zinc	None Detected	0.01	6010	1	250.
Fluorides	0.87	0.5	340.2	2	180.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0
pH	7.53	0.01	SW-904	8	
* Electrical Conductivity	0.39	0.1	SW-905	8	
Total Dissolved Solids	152.	10.	EPA-16	8	

* 1:1 extraction

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
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MITTELHAUSER CORP
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 09/18/90
Date Received: 09/05/90
Laboratory No.: 7669-3

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #B-4-4D COLLECTED BY WAYNE CHIOU ON 8-28-90 AT 13:10 BORING NO. 4

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	None Detected	0.01	7060	1	5.0
Chromium	None Detected	0.01	6010	1	560.
Copper	0.02	0.01	6010	1	25.
Molybdenum	None Detected	0.05	6010	1	350.
Zinc	None Detected	0.01	6010	1	250.
Fluorides	1.12	0.5	340.2	2	180.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0
pH	7.76	0.01	SW-904	S	
*Electrical Conductivity	1.87	0.1	SW-905	S	
Total Dissolved Solids	369.	10.	EPA-16	E	

* 1:1 extraction

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

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HITTELHAUSER CORP
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CA 92653

Date Reported: 09/18/90
Date Received: 09/05/90
Laboratory No.: 7669-4

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #B-4-6D COLLECTED BY WAYNE CHIOU ON 8-28-90 AT 13:30 BORING NO. 4

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	None Detected	0.01	7060	1	5.0
Chromium	None Detected	0.01	6010	1	560.
Copper	None Detected	0.01	6010	1	25.
Molybdenum	None Detected	0.05	6010	1	350.
Zinc	None Detected	0.01	6010	1	250.
Fluorides	1.24	0.5	340.2	2	180.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0
pH	8.13	0.01	SW-904	S	
* Electrical Conductivity	1.08	0.1	SW-905	S	
Total Dissolved Solids	79.	10.	EPA-16	E	

* 1:1 extraction

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
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MITTELHAUSER CORP
23272 MILL CREEK DRIVE, SUITE 300
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Date Reported: 09/18/90
Date Received: 09/05/90
Laboratory No.: 7669-5

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #1352-20-38D COLLECTED BY WAYNE CHIOU ON 8-29-90 AT 16:09 P4-1

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	0.01	0.01	7060	1	5.0
Chromium	None Detected	0.01	6010	1	560.
Copper	0.02	0.01	6010	1	25.
Molybdenum	0.65	0.05	6010	1	350.
Zinc	0.02	0.01	6010	1	250.
Fluorides	26.8	0.5	340.2	2	180.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0
pH	7.63	0.01	SW-904	S	
* Electrical Conductivity	64.79	0.1	SW-905	S	
Total Dissolved Solids	18,218	10.	EPA-16	E	

* 1:1 extraction

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

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Date Reported: 09/18/90
Date Received: 09/05/90
Laboratory No.: 7669-6

MODIFIED WET TEST
EXTRACT CONTAMINANTS ANALYZED ACCORDING TO TITLE 22,
ARTICLE II, CALIFORNIA ADMINISTRATIVE CODE FOR HAZARDOUS WASTE DETERMINATION
(STLC)

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #1352-20-39D COLLECTED BY WAYNE CHIOU ON 8-29-90 AT 16:30 P4-1

Constituents	Sample Results mg/liter	Method P.Q.L.	Method	Ref.	Regulatory Criteria STLC
Antimony	None Detected	0.1	6010	1	15.
Arsenic	0.01	0.01	7060	1	5.0
Chromium	None Detected	0.01	6010	1	560.
Copper	0.02	0.01	6010	1	25.
Molybdenum	0.67	0.05	6010	1	350.
Zinc	0.01	0.01	6010	1	250.
Fluorides	7.6	0.5	340.2	2	180.
Hexavalent Chromium	None Detected	1.0	7196	1	5.0
pH	8.14	0.01	SW-904	S	
* Electrical Conductivity	22.58	0.1	SW-905	S	
Total Dissolved Solids	2611.	10.	EPA-16	E	

* 1:1 extraction

Comment: All metals reported above are in mg/liter on a filtrate basis (STLC). These results are based on extracting sample according to Title 22, Article II, California Administrative Code using a 48-hour extraction substituting citric acid with deionized water.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte detectable based on sample size used and analytical technique employed.

N.D. = None Detected (If constituent is present it would be less than the method P.Q.L. listed to the right.

STLC = Soluble Threshold Limit Concentration

1. "Test Methods for Evaluating Solid Wastes:, SW 846, Nov. 1986.
2. "Methods for Chemical Analysis of Water and Wastes", EPA-600, 14-79-020.

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Attn.: WAYNE CHIOU 714-472-2444

Date Reported: 09/18/90 Page 1
Date Received: 09/05/90
Laboratory No.: 7669-1

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #B-1-5D COLLECTED BY WAYNE CHIOU ON 8-28-90 AT 08:45 BORING NO. 1

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	None Detected	7.0	mg/kg	6010	1
Arsenic	4.15	0.7	mg/kg	7060	1
Barium	91.9	0.7	mg/kg	6010	1
Beryllium	None Detected	0.7	mg/kg	6010	1
Cadmium	None Detected	0.7	mg/kg	6010	1
Chromium	12.7	0.7	mg/kg	6010	1
Cobalt	None Detected	3.5	mg/kg	6010	1
Copper	10.3	0.7	mg/kg	6010	1
Lead	3.75	3.5	mg/kg	6010	1
Mercury	None Detected	0.15	mg/kg	7471	1
Molybdenum	None Detected	3.5	mg/kg	6010	1
Nickel	38.6	3.5	mg/kg	6010	1
Selenium	None Detected	0.7	mg/kg	7740	1
Silver	None Detected	0.7	mg/kg	6010	1
Thallium	None Detected	7.0	mg/kg	6010	1
Vanadium	14.0	0.7	mg/kg	6010	1
Zinc	19.6	0.7	mg/kg	6010	1
Fluoride	127.	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH (1:1)	9.37	0.01	pH Units	9040	1

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

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Attn.: WAYNE CHIOU 714-472-2444

Date Reported: 09/18/90 Page 1
Date Received: 09/05/90
Laboratory No.: 7669-2

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #B-2-6D COLLECTED BY WAYNE CHIOU ON 8-28-90 AT 10:10 BORING NO. 2

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	None Detected	7.0	mg/kg	6010	1
Arsenic	2.23	0.7	mg/kg	7060	1
Barium	78.2	0.7	mg/kg	6010	1
Beryllium	None Detected	0.7	mg/kg	6010	1
Cadmium	None Detected	0.7	mg/kg	6010	1
Chromium	6.50	0.7	mg/kg	6010	1
Cobalt	None Detected	3.5	mg/kg	6010	1
Copper	8.79	0.7	mg/kg	6010	1
Lead	None Detected	3.5	mg/kg	6010	1
Mercury	None Detected	0.15	mg/kg	7471	1
Molybdenum	None Detected	3.5	mg/kg	6010	1
Nickel	5.70	3.5	mg/kg	6010	1
Selenium	None Detected	0.7	mg/kg	7740	1
Silver	None Detected	0.7	mg/kg	6010	1
Thallium	None Detected	7.0	mg/kg	6010	1
Vanadium	11.4	0.7	mg/kg	6010	1
Zinc	21.9	0.7	mg/kg	6010	1
Fluoride	104.	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH STRAIGHT	8.71	0.01	pH Units	9040	1

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

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Attn.: WAYNE CHIOU 714-472-2444

Date Reported: 09/18/90 Page 1
Date Received: 09/05/90
Laboratory No.: 7669-3

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #B-4-4D COLLECTED BY WAYNE CHIOU ON 8-28-90 AT 13:10 BORING NO. 4

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	None Detected	7.0	mg/kg	6010	1
Arsenic	2.05	0.7	mg/kg	7060	1
Barium	95.7	0.7	mg/kg	6010	1
Beryllium	None Detected	0.7	mg/kg	6010	1
Cadmium	None Detected	0.7	mg/kg	6010	1
Chromium	13.6	0.7	mg/kg	6010	1
Cobalt	3.61	3.5	mg/kg	6010	1
Copper	12.9	0.7	mg/kg	6010	1
Lead	None Detected	3.5	mg/kg	6010	1
Mercury	None Detected	0.15	mg/kg	7471	1
Molybdenum	None Detected	3.5	mg/kg	6010	1
Nickel	7.81	3.5	mg/kg	6010	1
Selenium	None Detected	0.7	mg/kg	7740	1
Silver	None Detected	0.7	mg/kg	6010	1
Thallium	None Detected	7.0	mg/kg	6010	1
Vanadium	36.7	0.7	mg/kg	6010	1
Zinc	35.7	0.7	mg/kg	6010	1
Fluoride	296.	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH (1:1)	8.90	0.01	pH Units	9040	1

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

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Attn.: WAYNE CHIOU 714-472-2444

Date Reported: 09/18/90 Page 1
Date Received: 09/05/90
Laboratory No.: 7669-4

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #B-4-5D COLLECTED BY WAYNE CHIOU ON 8-28-90 AT 13:30 BORING NO. 4

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	None Detected	7.0	mg/kg	6010	1
Arsenic	2.50	0.7	mg/kg	7060	1
Barium	216.	0.7	mg/kg	6010	1
Beryllium	None Detected	0.7	mg/kg	6010	1
Cadmium	None Detected	0.7	mg/kg	6010	1
Chromium	11.7	0.7	mg/kg	6010	1
Cobalt	None Detected	3.5	mg/kg	6010	1
Copper	10.1	0.7	mg/kg	6010	1
Lead	None Detected	3.5	mg/kg	6010	1
Mercury	None Detected	0.15	mg/kg	7471	1
Molybdenum	None Detected	3.5	mg/kg	6010	1
Nickel	5.84	3.5	mg/kg	6010	1
Selenium	None Detected	0.7	mg/kg	7740	1
Silver	None Detected	0.7	mg/kg	6010	1
Thallium	None Detected	7.0	mg/kg	6010	1
Vanadium	25.1	0.7	mg/kg	6010	1
Zinc	21.3	0.7	mg/kg	6010	1
Fluoride	169.	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH (1:1)	8.86	0.01	pH Units	9040	1

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

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Attn.: WAYNE CHIOU 714-472-2444

Date Reported: 09/18/90 Page 1
Date Received: 09/05/90
Laboratory No.: 7669-5

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #1352-20-38D COLLECTED BY WAYNE CHIOU ON 8-29-90 AT 16:09 P4-1

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	None Detected	10.0	mg/kg	6010	1
Arsenic	9.30	1.0	mg/kg	7060	1
Barium	109.	10.	mg/kg	6010	1
Beryllium	None Detected	1.0	mg/kg	6010	1
Cadmium	None Detected	1.0	mg/kg	6010	1
Chromium	356.	1.0	mg/kg	6010	1
Cobalt	None Detected	5.0	mg/kg	6010	1
Copper	29.7	1.0	mg/kg	6010	1
Lead	None Detected	5.0	mg/kg	6010	1
Mercury	None Detected	0.2	mg/kg	7471	1
Molybdenum	112.	5.0	mg/kg	6010	1
Nickel	5.88	5.0	mg/kg	6010	1
Selenium	1.00	1.0	mg/kg	7740	1
Silver	None Detected	1.0	mg/kg	6010	1
Thallium	None Detected	10.0	mg/kg	6010	1
Vanadium	30.9	1.0	mg/kg	6010	1
Zinc	250.	1.0	mg/kg	6010	1
Fluoride	3230.	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH (1:1)	7.89	0.01	pH Units	9040	1

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

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ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 ATLAS CT., BAKERSFIELD, CALIFORNIA 93308 PHONE (805) 327-4911 FAX (805) 327-1918

MITTELHAUSER CORP
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CA 92653
Attn.: WAYNE CHIOU 714-472-2444

Date Reported: 09/18/90 Page 1
Date Received: 09/05/90
Laboratory No.: 7669-6

Sample Description: PG & E TOPOCK PROJECT #B52 SAMPLE #1352-20-39D COLLECTED BY WAYNE CHIOU ON 8-29-90 AT 16:30 P4-1

TOTAL CONTAMINANTS
(Title 22, Article II, California Administrative Code)

Constituents	Sample Results	Method P.Q.L.	Units	Method	Ref.
Antimony	None Detected	7.0	mg/kg	6010	1
Arsenic	3.18	0.7	mg/kg	7060	1
Barium	140.	0.7	mg/kg	6010	1
Beryllium	None Detected	0.7	mg/kg	6010	1
Cadmium	None Detected	0.7	mg/kg	6010	1
Chromium	15.7	0.7	mg/kg	6010	1
Cobalt	None Detected	3.5	mg/kg	6010	1
Copper	9.29	0.7	mg/kg	6010	1
Lead	None Detected	3.5	mg/kg	6010	1
Mercury	None Detected	0.15	mg/kg	7471	1
Molybdenum	5.96	3.5	mg/kg	6010	1
Nickel	6.80	3.5	mg/kg	6010	1
Selenium	None Detected	0.7	mg/kg	7740	1
Silver	None Detected	0.7	mg/kg	6010	1
Thallium	None Detected	7.0	mg/kg	6010	1
Vanadium	27.4	0.7	mg/kg	6010	1
Zinc	32.4	0.7	mg/kg	6010	1
Fluoride	402.	1.0	mg/kg	340.2	2
Hexavalent Chromium	None Detected	1.0	mg/kg	7196	1
pH STRAIGHT	8.60	0.01	pH Units	9040	1

(See Last Page for Comments, Definitions, Regulatory Criteria, and References)

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corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 1352

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) WAYNE CHIOU / Wayne Chiou

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4A, 4C	5A, 5B	7	8	9B	10	PRESERVATIVE	REMARKS
B-1-5D	8/28/90	0845	SOIL	BORING No. 1	1	X	X	X	X	X	X	ICE	
B-2-6D		1010		BORING NO 2	1	X	X	X	X	X	X		
B-4-4D		1310		BORING NO 4	1	X	X	X	X	X	X		
B-4-6D		1330		BORING NO 4	1	X	X	X	X	X	X		
1352-20-38D	8/29/90	1669	SLUDGE	P4-1	1	X	X	X	X	X	X		
1352-20-39D		1630	SAND	P4-1	1	X	X	X	X	X	X		

RELINQUISHED BY: (SIGNATURE) Wayne Chiou	DATE 8/31	TIME 1650	RECEIVED BY: (SIGNATURE) T Kimell (UPS)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY: BC
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: RICH EGLIN	LABORATORY PHONE NUMBER: (805) 327-4911
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106201

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

Client: Mittelhauser Corporation
23272 Mill Creek Rd. Ste 300
Laguna Hills, CA 92653
Attention: Carl Kelley

Date: Oct. 17, 1991

Date Received: Oct. 9, 1991

Laboratory No.: 48273

Sample: Sixteen Soils and One Water Sample,
Nine samples were archived.

Project: P1352-20, PG & E Topock

The following weights and volumes were used for the analysis of TCLP chromium. Please see the attached Standard Operating Procedure for details of the TCLP method. One part of the TCLP method is to determine the percent solids of the sample. Samples number: 1,6,8, and 16 were dry soils and did not contain any significant amount of liquid. They were not filtered prior to the TCLP extraction.

Sample ID	TCLP Weight	TCLP Volume
1. 1352-20-44, P1-1	131.9 g	2638 ml
6. 1352-20-48, P1-5	136.7 g	2734 ml
8. 1352-20-50, P1-6	131.7 g	2634 ml
16. 1352-20-57, P2-6	134.6 g	2692 ml

Respectfully Submitted,
Truesdail Laboratories

Patty Mata, Project Manager
Water and Waste Laboratory

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

Client: Mittelhauser Corporation
23272 Mill Creek Rd. Ste 300
Laguna Hills, CA 92653
Attention: Carl Kelley

Date: Oct. 17, 1991

Date Received: Oct. 9, 1991

Laboratory No.: 48273

Sample: Sixteen Soils and One Water Sample,
Nine samples were archived.

Project: P1352-20, PG & E Topock

Investigation: Toxicity Characteristics Leaching Procedure (EPA 1311).
Analysis of extract for Chromium (EPA 200.7).

Sample ID	Detection Limit, mg/l	Concentration mg/l
1. 1352-20-44, P1-1	0.1	3.2
6. 1352-20-48, P1-5	0.1	6.2
8. 1352-20-50, P1-6	0.1	ND
16. 1352-20-57, P2-6	0.1	ND

TCLP Maximum Limit for Chromium is 5.0 mg/l.

ND = Not Detected, below the detection limit.

Respectfully Submitted,
Truesdail Laboratories

Patty Mata, Project Manager
Water and Waste Laboratory

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
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AREA CODE 213 • 225-1584
FAX 714 • 730-6462

Client: Mittelhauser Corporation
23272 Mill Creek Rd. Ste 300
Laguna Hills, CA 92653
Attention: Carl Kelley

Date: Oct. 17, 1991

Date Received: Oct. 9, 1991

Laboratory No.: 48273

Sample: Sixteen Soils and One Water Sample,
Nine samples were archived.

Project: P1352-20, PG & E Topock

Investigation: Hazardous Waste Evaluation per Title 22 of the California Administrative Code of Regulations. (WET Test).
Analysis of extract for Chromium (EPA 200.7).

Sample ID	Detection Limit, mg/l	Concentration mg/l
1. 1352-20-44, P1-1	0.1	34.9
6. 1352-20-48, P1-5	0.1	37.0

STLC (Soluble Threshold Limit Concentration) for Chromium is 560 mg/l.

Respectfully Submitted,
Truesdail Laboratories

Patty Mata, Project Manager
Water and Waste Laboratory

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

Client: Mittelhauser Corporation
23272 Mill Creek Rd. Ste 300
Laguna Hills, CA 92653
Attention: Carl Kelley

Date: Oct. 17, 1991

Date Received: Oct. 9, 1991

Laboratory No.: 48273

Sample: Sixteen Soils and One Water Sample,
Nine samples were archived.

Project: P1352-20, PG & E Topock

Investigation: Total Chromium Analysis, EPA 6010 and EPA 200.7

Sample ID	Detection Limit	Concentration
1. 1352-20-44, P1-1	3.8 mg/kg	2,930 mg/kg
6. 1352-20-48, P1-5	4.1 mg/kg	1,580 mg/kg
8. 1352-20-50, P1-6	0.5 mg/kg	5.7 mg/kg
16. 1352-20-57, P2-6	0.4 mg/kg	8.6 mg/kg
17. 1352-20-58, Blank	0.01 mg/l	ND

ND = Not Detected, below the detection limit.

Respectfully Submitted,
Truesdail Laboratories

Patty Mata, Project Manager
Water and Waste Laboratory

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
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Client: Mittelhauser Corporation
23272 Mill Creek Rd. Ste 300
Laguna Hills, CA 92653
Attention: Carl Kelley

Date: Oct. 17, 1991

Date Received: Oct. 9, 1991

Laboratory No.: 48273

Sample: Sixteen Soils and One Water Sample,
Nine samples were archived.

Project: P1352-20, PG & E Topock

Spiked Sample Results:

A sample spike was performed on the TCLP extract with the following results. Please note that the result below was determined from a re-analysis of the sample. After calculations, the concentration of chromium in the undiluted extract would be 6.4 mg/l.

Units: Mg/l in diluted sample solution

Sample ID	Spiked Sample Result	Sample Result	Spike Added	Percent Recovery
6. 1352-20-48, P1-5	4.40	2.54	2.00	93.0%

Respectfully Submitted,
Truesdail Laboratories

Patty Mata, Project Manager
Water and Waste Laboratory

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TRUESDAIL LABORATORIES, INC.

Revision: 0
Date: 2/89
Prepared By: Patricia Wisneski
Page 1 of 4

STANDARD OPERATING PROCEDURE FOR:

1.4 TCLP EXTRACTION PROCEDURE

Referenced Method

40CFR Appendix I to Part 268

Scope and Application:

This method is designed to determine the mobility of inorganic contaminants present in liquid, solid and multiphase wastes.

Apparatus:

1) Extractor: foam-lined, rotating wooden box similar to figure 3 of EPA method 1310.

2) Filter holder: MFS brand pressure filtration set-up: rinse with 10% HNO_3 before use.

3) Filters: 142 mm glass fiber filters, pore size 0.7 um. Rinse with 10% HNO_3 before use.

4) Nitrogen: for pressure filtration.

Reagents:

1) Deionized water - monitored for impurities.

2) Sodium hydroxide: (1.0N) Dissolve 8 grams of NaOH in DI water and dilute to 200 ml.

3) Glacial acetic acid.

4) Extraction fluid #1: Add 11.4 ml of glacial acetic acid to approx. 1 liter of DI water, then add 128.6 ml of 1.0N NaOH solution and dilute to 2 liters with DI water. Prepare this solution accurately and the pH = 4.93 $\pm$ 0.05.

5) Extraction fluid #2: Dilute 5.7 ml of glacial acetic acid to 1 liter with DI water. When correctly prepared, the pH = 2.88 $\pm$ 0.05.

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Procedure

1) If sample contains no liquid at all, then go to step 7. If the sample is liquid or multiphase, then continue as follows.

2) Weigh out a representative aliquot of sample.

3) Preweigh a 0.45 um pore size filter to the nearest 0.01 gram.

4) Filter the sample aliquot in the pressure filtration system using the preweighed filter. Stop filtering when pressurizing gas moves through the filter. This liquid will constitute part or all of the extract. For oil samples, the liquid portion of the sample is filtered and treated as part of the TCLP extract. Heavy oils or greases that will not filter are treated as solids.

5) Remove and postweigh the filter and solid oaterial to the nearest 0.01 gram. Determine the wet weight of the solid material.

6) If the waste contains less than 0.5% solids by weight [(grams solid material/100 grams waste) x 100% = % solids] then the solid material is discarded and the filtered liquid is treated as the TCLP exact and analyzed. An extract percent solids should be determined if the waste is close to the 0.5% limit.

7) The solid material filtered from the liquid phase in wastes with greater than 0.5% solids, and any solid waste with no liquid at all need to be evaluated for particle size. If the solid can pass through a 9.5 mm sieve, then no treatment is necessary. Otherwise, the sample must be crushed, cut or ground so that it will pass through a 9.5 mm sieve.

8) To determine the appropriate extraction fluid for a sample to be extracted for non-volatile compounds, use the following test.

9) Weight 5 grams of sample into a 500 ml beaker.

10) Add 96.5 ml of DI water to sample.

11) Add a magnetic stir bar to beaker and stir rigorously for 5 minutes.

12) Measure and record the pH. If the pH $\leq$ 5, then extraction fluid #1 is used. If the pH > 5 then extraction fluid #2 is used.

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13) Discard the aliquot used to determine the extraction fluid used.

14) Measure out the correct extraction fluid according to the following formula. Use the weight of the solids left on the filter after original filtration of sample. Or if the sample contained no free liquids, then use the weight of the sample itself from step 2. The amount of extraction fluid added to the sample is equal to 20 times the sample's weight in grams. Place the sample in a clean, acid rinsed plastic bottle and add the extraction fluid. Start a blank by placing extraction fluid in a bottle and extracting it with samples.

15) Cap the bottle tightly and place in in the extractor.

16) Extract the sample for 18 $\pm$ 2 hours. The ambient temperature should be 22 $\pm$ 3°C during the extraction.

17) Filter the extract using the pressure filtration set-up and a glass fiber filter (142 mm with 0.8 mm pore size). The filtration set-up and the filter should both be acid-rinsed prior to use and in between samples.

18) If the sample contained no initial liquid, then the filtered extract is defined as the TCLP extract and is analyzed for metals.

19) If compatible (eg. multiple phases will not result on combination), the filtered extract is combined with the initial liquid of the sample. This combination is defined as the TCLP extract and is analyzed for metals.

20) If the initial liquid is not or may not be compatible with the filtered liquid extract, then they are not combined. These two liquids are analyzed separately and the results are combined mathematically as follows:

$$\frac{(V_O)\ (C_O) + (V_A)\ (C_A)}{(V_O + V_A)} = C_E$$

V_O = Volume (mls) of organic phase
C_O = Concentration (ppm) of organic phase
V_A = Volume (mls) of aqueous phase
C_A = Concentration (ppm) of aqueous phase
C_E = Concentration (ppm) of final extract

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21) At least one matric spike should be analyzed per batch of extractions, per sample matrix type.

22) Method of standard additions should be used for samples where any form of interference is suspected.

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MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE ___ OF ___

PROJECT NUMBER: 1352-20

PROJECT NAME: PGE TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC LINARD

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TPH, SEMI-VOLATILES (PAHS)	SVOC (PAHS)	TCLP (CHROMIUM)	TOTAL CHROMIUM (N2O)	HEXAVALENT CHROMIUM		PRESERVATIVE	REMARKS
1352-20-44	10/8/91		Soil	P1-1 SEDIMENT	1	X	X	X					
1352-20-44D				P1-1 "	1	X	X	X		X			
1352-20-45				P1-2 "	1					X			REQUEST SEMI
1352-20-46				P1-3 "	1					X			F-A T
1352-20-47				P1-4 "	1					X			
1352-20-48				P1-5 "	1	X	X	X	X				
1352-20-49				P1-6 "	1					X			
1352-20-50				P1-6 SAND	1	X		X					
1352-20-51				P2-1 SEDIMENT	1					X			
1352-20-52				P2-2 "	1					X			
1352-20-53				P2-3 "	1					X			
1352-20-54				P2-4 "	1					X			
1352-20-54D				P2-4 "	1					X			
1352-20-55				P2-5 "	1					X			
1352-20-56				P2-6 "	1					X			
1352-20-57				P2-6 SAND	1	X		X					

RELINQUISHED BY: (SIGNATURE)	DATE 10/8/91	TIME	RECEIVED BY: (SIGNATURE) EQ. BLANK	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY: TRUESDAIL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER: (714) 730-6239
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
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PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

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MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

PROJECT NUMBER: 1352-20

PROJECT NAME: IGYE TOPECK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONALD / [signature]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TOTAL Cr (Hex)						PRESERVATIVE	REMARKS
1352-20-58	10-8-91	0952	H_2O	EQUIPMENT BLANK	1	X						ICE	REQUEST 5 DAY TAT

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	LABORATORY:
[signature]	10/8/91	1257	[signature]	17	TRUCEDAL
				TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 17	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: JULIA	LABORATORY PHONE NUMBER: (714) 730-6239
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
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REMARKS: [illegible]

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MITTELHAUSER corporation
23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1352-20

PROJECT NAME: [illegible]

SAMPLED BY: (PRINTED AND SIGNATURE) [illegible]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TTLC: Cr	TCLP: Cr	TTLC: Cr	TOTAL Cr (4.0)	ARCHIVE	PRESERVATIVE	REMARKS
1352-20-44	10/8/91	[illegible]	SOIL	11-1 SED.	1	X	X	X			ICE	
1352-20-44D		[illegible]		11-1 SED.	1					X		REQUEST
XL 1352-20-45		1041		11-2 SED.	1					X		5 DAY T-A-T
XL 1352-20-46		1041		11-3 SED.	1					X		
XL 1352-20-47		1025		11-4 SED.	1					X		
1352-20-48		1020		11-5 SED.	1	X	X	X				
XL 1352-20-49		1012		11-6 SED.	1					X		
1352-20-50		1014		11-6 SAND	1	X	X					
L 1352-20-51		[illegible]		12-1 SED.	1					X		
L 1352-20-52		[illegible]		12-2 SED.	1					X		
L 1352-20-53		[illegible]		12-3 SED.	1					X		
L 1352-20-54		[illegible]		12-4 SED.	1					X		
1352-20-54D		[illegible]		12-4 SED.	1					X		
L 1352-20-55		[illegible]		12-5 SED.	1					X		
L 1352-20-56		747		12-6 SED.	1					X		
1352-20-57	[illegible]	[illegible]	SOIL	12-6 SAND	1	X	X				ICE	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	LABORATORY:
[illegible]	[illegible]	[illegible]	[illegible]	TOTAL NO. OF CONTAINERS (THIS SHIPMENT) [illegible]	TRUESDALE
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: JULIA	LABORATORY PHONE NUMBER: (714) 720-1237
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO	

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CANARY, LABORATORY
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GOLD, PROJECT FILE

REMARKS: [illegible]

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: MITTELHAUSER CORPORATION
23272 Millcreek Drive, Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: November 7, 1991

DATE REC'D: October 28, 1991

SAMPLE: Ten Soil Samples
PROJECT: P1352 - Topock Closure

LABORATORY NO.: 48473
(Update of 48273)

INVESTIGATION: TCLP extraction per EPA 1311, Analysis for Chromium by ICP (EPA 200.7)

RESULTS

MILLIGRAMS PER LITER

	Sample I.D.	Detection Limit	Concentration
1.	1352-20-45:P1-2:Res	0.1	0.9
2.	1352-20-46:P1-3:Res	0.1	5.5
3.	1352-20-47:P1-4:Res	0.1	2.5
4.	1352-20-49:P1-6:Res	0.1	1.3
5.	1352-20-51:P2-1:Res	0.1	2.8
6.	1352-20-52:P2-2:Res	0.1	2.8
7.	1352-20-53:P2-3:Res	0.1	2.5
8.	1352-20-54:P2-4:Res	0.1	2.3
9.	1352-20-55:P2-5:Res	0.1	4.2
10.	1352-20-56:P2-6:Res	0.1	1.6

The TCLP Maximum Limit for Chromium is 5 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

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TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

Client: Mittelhauser Corporation
23272 Mill Creek Rd. Ste 300
Laguna Hills, CA 92653
Attention: Carl Kelley

Date: Nov. 7, 1991

Date Received: Oct 28, 1991

Laboratory No.: 48473

Sample: Originally Received on 10/9/91: Sixteen Soils and One Water Sample (of which nine samples were archived). On 10/28/91 it was requested that 10 of the soil samples be extracted per EPA 1311 (TCLP), and analyzed for chromium.

Project: P1352-Topock Closure

The following weights and volumes were used for the analysis of TCLP chromium. Please see the attached Standard Operating Procedure for details of the TCLP method. One part of the TCLP method is to determine the percent solids of the sample. All samples were dry soils and did not contain any significant amount of liquid. They were not filtered prior to the TCLP extraction.

Sample ID	TCLP Weight	TCLP Volume
48473- 1. 1352-20-45: P1-2: Res	94.7 g	1894 ml
48473- 2. 1352-20-46: P1-3: Res	96.2 g	1924 ml
48473- 3. 1352-20-47: P1-4: Res	96.0 g	1920 ml
48473- 4. 1352-20-49: P1-6: Res	94.6 g	1893 ml
48473- 5. 1352-20-51: P2-1: Res	96.8 g	1936 ml
48473- 6. 1352-20-52: P2-2: Res	96.0 g	1919 ml
48473- 7. 1352-20-53: P2-3: Res	95.6 g	1912 ml
48473- 8. 1352-20-54: P2-4: Res	97.6 g	1953 ml
48473- 9. 1352-20-55: P2-5: Res	96.7 g	1933 ml
48473-10. 1352-20-56: P2-6: Res	96.8 g	1936 ml

Respectfully Submitted,
Truesdail Laboratories

Patty Mata, Project Manager
Water and Waste Laboratory

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PMCOBUS0106215

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

Client: Mittelhauser Corporation
23272 Mill Creek Rd. Ste 300
Laguna Hills, CA 92653
Attention: Carl Kelley

Date: Nov. 7, 1991

Date Received: Oct 28, 1991

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Project: P1352-Topock Closure

The following weights and volumes were used for the analysis of TCLP chromium. Please see the attached Standard Operating Procedure for details of the TCLP method. One part of the TCLP method is to determine the percent solids of the sample. All samples were dry soils and did not contain any significant amount of liquid. They were not filtered prior to the TCLP extraction.

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48473- 4. 1352-20-49: P1-6: Res	94.6 g	1893 ml
48473- 5. 1352-20-51: P2-1: Res	96.8 g	1936 ml
48473- 6. 1352-20-52: P2-2: Res	96.0 g	1919 ml
48473- 7. 1352-20-53: P2-3: Res	95.6 g	1912 ml
48473- 8. 1352-20-54: P2-4: Res	97.6 g	1953 ml
48473- 9. 1352-20-55: P2-5: Res	96.7 g	1933 ml
48473-10. 1352-20-56: P2-6: Res	96.8 g	1936 ml

Respectfully Submitted,
Truesdail Laboratories

Patty Mata, Project Manager
Water and Waste Laboratory

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PMCOBUS0106216

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-59

LABORATORY NO.: 48943-1

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	2,200	2,850
Antimony	(Sb, 6010)	500	0.4	ND
Arsenic	(As, SM3500As-B)	500	1.7	16.3
Barium	(Ba, 6010)	10,000	0.4	165
Beryllium	(Be, 6010)	75	0.4	ND
Cadmium	(Cd, 6010)	100	0.4	1.4
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	0.4	145
Cobalt	(Co, 6010)	8,000	0.4	3.0
Copper	(Cu, 6010)	2,500	0.4	12.5
Lead	(Pb, 6010)	1,000	0.4	1.6
Mercury	(Hg, 245.5)	20	0.047	ND
Molybdenum	(Mo, 6010)	3,500	0.4	7.3
Nickel	(Ni, 6010)	2,000	0.4	7.9
Selenium	(Se, SM3500Se-C)	100	0.17	ND
Silver	(Ag, 6010)	500	0.4	ND
Thallium	(Tl, 6010)	700	0.4	ND
Vanadium	(V, 6010)	2,400	0.4	28.4
Zinc	(Zn, 6010)	5,000	0.4	125

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

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PMCOBUS0106217

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH - DEVELOPMENT - TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-61

LABORATORY NO.: 48943-3

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22
California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	1,290	1,730
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	0.87	4.09
Barium	(Ba, 6010)	10,000	2.0	36.2
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.10	0.15
Chromium-total	(Cr, 6010)	2,500	2.0	209
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	9.6
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.039	0.061
Molybdenum	(Mo, 6010)	3,500	2.0	133
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.17	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	7.5
Zinc	(Zn, 6010)	5,000	2.0	199

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata

Patty Mata, Project Manager
Water and Waste Laboratory

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

PMCOBUS0106218

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-61D

LABORATORY NO.: 48943-4

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22
California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	766	1,320
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	0.47	3.23
Barium	(Ba, 6010)	10,000	2.0	35.1
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	140
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	6.1
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.025	ND
Molybdenum	(Mo, 6010)	3,500	2.0	93.1
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.19	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	5.4
Zinc	(Zn, 6010)	5,000	2.0	127

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata

Patty Mata, Project Manager
Water and Waste Laboratory

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PMCOBUS0106219

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-8239
AREA CODE 213 • 225-1564
FAX 714 • 730-8462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-62

LABORATORY NO.: 48943-5

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22
California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	990	1,170
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	0.51	3.87
Barium	(Ba, 6010)	10,000	2.0	29.4
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	104
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	5.4
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.046	ND
Molybdenum	(Mo, 6010)	3,500	2.0	188
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.20	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	5.4
Zinc	(Zn, 6010)	5,000	2.0	78.4

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

PMCOBUS0106220

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-63

LABORATORY NO.: 48943-6

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22
California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	1,480	3,750
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	2.10	5.95
Barium	(Ba, 6010)	10,000	2.0	121
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	555
Cobalt	(Co, 6010)	8,000	2.0	2.9
Copper	(Cu, 6010)	2,500	2.0	19.9
Lead	(Pb, 6010)	1,000	2.0	2.4
Mercury	(Hg, 245.5)	20	0.025	0.032
Molybdenum	(Mo, 6010)	3,500	2.0	81.8
Nickel	(Ni, 6010)	2,000	2.0	6.6
Selenium	(Se, SM3500Se-C)	100	0.21	0.58
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	28.7
Zinc	(Zn, 6010)	5,000	2.0	611

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106221

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

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FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-64

LABORATORY NO.: 48943-7

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	700	966
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	1.82	6.12
Barium	(Ba, 6010)	10,000	2.0	38.8
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.09	0.13
Chromium-total	(Cr, 6010)	2,500	2.0	234
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	8.3
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.039	ND
Molybdenum	(Mo, 6010)	3,500	2.0	136
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.18	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	7.9
Zinc	(Zn, 6010)	5,000	2.0	166

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106222

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-68

LABORATORY NO.: 48943-11

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	1,300	1,510
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	1.52	4.31
Barium	(Ba, 6010)	10,000	2.0	34.8
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	303
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	11.9
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.045	ND
Molybdenum	(Mo, 6010)	3,500	2.0	302
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.15	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	7.7
Zinc	(Zn, 6010)	5,000	2.0	183

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106223

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

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TUSTIN, CALIF. 92680
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FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-68D

LABORATORY NO.: 48943-12

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22
California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	909	1,250
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	1.90	5.52
Barium	(Ba, 6010)	10,000	2.0	32.0
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	264
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	10.0
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.045	ND
Molybdenum	(Mo, 6010)	3,500	2.0	267
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.19	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	6.6
Zinc	(Zn, 6010)	5,000	2.0	152

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106224

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH - DEVELOPMENT - TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
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CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-71

LABORATORY NO.: 48943-15

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22
California Administrative Code of Regulations
pH Analysis of Water

pH, Units (EPA 150.1) 6.7

RESULTS

Parameter		TTLC*	MILLIGRAMS PER LITER Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	0.25	0.26
Antimony	(Sb, 6010)	500	0.01	ND
Arsenic	(As, SM3500As-B)	500	0.005	ND
Barium	(Ba, 6010)	10,000	0.01	ND
Beryllium	(Be, 6010)	75	0.01	ND
Cadmium	(Cd, 6010)	100	0.01	ND
Chromium-hexavalent	(7196)	500	0.01	ND
Chromium-total	(Cr, 6010)	2,500	0.01	ND
Cobalt	(Co, 6010)	8,000	0.01	ND
Copper	(Cu, 6010)	2,500	0.01	ND
Lead	(Pb, 6010)	1,000	0.01	ND
Mercury	(Hg, 245.5)	20	0.0005	ND
Molybdenum	(Mo, 6010)	3,500	0.01	ND
Nickel	(Ni, 6010)	2,000	0.01	0.01
Selenium	(Se, SM3500Se-C)	100	0.005	ND
Silver	(Ag, 6010)	500	0.01	ND
Thallium	(Tl, 6010)	700	0.01	ND
Vanadium	(V, 6010)	2,400	0.01	ND
Zinc	(Zn, 6010)	5,000	0.01	0.10

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106225

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
Attention: Carl Kelley

DATE: Jan. 21, 1992

RECEIVED: Dec. 23, 1992

LABORATORY NO. 48943

SAMPLE: All TCLP Samples

INVESTIGATION: Summary of TCLP and pH Results

RESULTS

Sample I.D.	pH, Units	Milligrams per Liter TCLP Chromium Detection Limit	Milligrams per Liter TCLP Chromium Concentration
1. 1352-20-59	8.3	0.1	0.4
2. 1352-20-60	-	0.1	1.2
3. 1352-20-61	7.5	0.1	1.8
4. 1352-20-61D	7.4	0.1	2.0
5. 1352-20-62	7.4	0.1	1.0
6. 1352-20-63	7.4	0.1	3.2
7. 1352-20-64	7.6	0.1	3.1
8. 1352-20-65	-	0.1	2.4
9. 1352-20-66	-	0.1	0.9
10. 1352-20-67	-	0.1	3.3
11. 1352-20-68	7.4	0.1	3.2
12. 1352-20-68D	7.6	0.1	3.3
13. 1352-20-69	-	0.1	3.8
14. 1352-20-70	-	0.1	4.7

ND = Not Detected, below the value of the noted detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106226

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: Two Solids

LABORATORY NO.: 48943

INVESTIGATION: STLC extraction per Title 22
California Administrative Code of Regulations

RESULTS

Sample I.D.	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
1. 1352-20-59	EPA 340.2	0.10	6.4
2. 1352-20-63	EPA 340.2	0.10	5.3

The Soluble Threshold Limit Concentration for Fluoride is 180 mg/l.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106227

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REPORT

DUPLICATE

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6238
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: **Mittlehauser Corporation**
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-59

LABORATORY NO.: 48943-1

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	2,200	2,850
Antimony	(Sb, 6010)	500	0.4	ND
Arsenic	(As, SM3500As-B)	500	1.7	16.3
Barium	(Ba, 6010)	10,000	0.4	165
Beryllium	(Be, 6010)	75	0.4	ND
Cadmium	(Cd, 6010)	100	0.4	1.4
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	0.4	145
Cobalt	(Co, 6010)	8,000	0.4	3.0
Copper	(Cu, 6010)	2,500	0.4	12.5
Lead	(Pb, 6010)	1,000	0.4	1.6
Mercury	(Hg, 245.5)	20	0.047	ND
Molybdenum	(Mo, 6010)	3,500	0.4	7.3
Nickel	(Ni, 6010)	2,000	0.4	7.9
Selenium	(Se, SM3500Se-C)	100	0.17	ND
Silver	(Ag, 6010)	500	0.4	ND
Thallium	(Tl, 6010)	700	0.4	ND
Vanadium	(V, 6010)	2,400	0.4	28.4
Zinc	(Zn, 6010)	5,000	0.4	125

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106228

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
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AREA CODE 213 • 225-1584
FAX 714 • 730-6462

DUPLICATE

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-61

LABORATORY NO.: 48943-3

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	1,290	1,730
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	0.87	4.09
Barium	(Ba, 6010)	10,000	2.0	36.2
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.10	0.15
Chromium-total	(Cr, 6010)	2,500	2.0	209
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	9.6
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.039	0.061
Molybdenum	(Mo, 6010)	3,500	2.0	133
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.17	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	7.5
Zinc	(Zn, 6010)	5,000	2.0	199

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

P. Mata

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106229

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

REPORT

DUPLICATE

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-61D

LABORATORY NO.: 48943-4

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22
California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	766	1,320
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	0.47	3.23
Barium	(Ba, 6010)	10,000	2.0	35.1
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	140
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	6.1
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.025	ND
Molybdenum	(Mo, 6010)	3,500	2.0	93.1
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.19	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	5.4
Zinc	(Zn, 6010)	5,000	2.0	127

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

PMCOBUS0106230

REPORT

DUPLICATE

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-62

LABORATORY NO.: 48943-5

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	990	1,170
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	0.51	3.87
Barium	(Ba, 6010)	10,000	2.0	29.4
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	104
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	5.4
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.046	ND
Molybdenum	(Mo, 6010)	3,500	2.0	188
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.20	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	5.4
Zinc	(Zn, 6010)	5,000	2.0	78.4

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106231

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

DUPLICATE

CLIENT: Hittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-63

LABORATORY NO.: 48943-6

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	1,480	3,750
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	2.10	5.95
Barium	(Ba, 6010)	10,000	2.0	121
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	555
Cobalt	(Co, 6010)	8,000	2.0	2.9
Copper	(Cu, 6010)	2,500	2.0	19.9
Lead	(Pb, 6010)	1,000	2.0	2.4
Mercury	(Hg, 245.5)	20	0.025	0.032
Molybdenum	(Mo, 6010)	3,500	2.0	81.8
Nickel	(Ni, 6010)	2,000	2.0	6.6
Selenium	(Se, SM3500Se-C)	100	0.21	0.58
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	28.7
Zinc	(Zn, 6010)	5,000	2.0	611

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106232

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

REPORT

TRUESDAIL LABORATORIES, INC.

DUPLICATE

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
~~AREA CODE~~ 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-64

LABORATORY NO.: 48943-7

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22
California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	700	966
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	1.82	6.12
Barium	(Ba, 6010)	10,000	2.0	38.8
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.09	0.13
Chromium-total	(Cr, 6010)	2,500	2.0	234
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	8.3
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.039	ND
Molybdenum	(Mo, 6010)	3,500	2.0	136
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.18	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	7.9
Zinc	(Zn, 6010)	5,000	2.0	166

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

PMCOBUS0106233

REPORT

DUPLICATE

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-8239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-68

LABORATORY NO.: 48943-11

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	1,300	1,510
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	1.52	4.31
Barium	(Ba, 6010)	10,000	2.0	34.8
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	303
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	11.9
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.045	ND
Molybdenum	(Mo, 6010)	3,500	2.0	302
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.15	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	7.7
Zinc	(Zn, 6010)	5,000	2.0	183

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106234

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

REPORT

DUPLICATE

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-68D

LABORATORY NO.: 48943-12

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations

RESULTS

MILLIGRAMS PER KILOGRAM

Parameter		TTLC*	Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	909	1,250
Antimony	(Sb, 6010)	500	2.0	ND
Arsenic	(As, SM3500As-B)	500	1.90	5.52
Barium	(Ba, 6010)	10,000	2.0	32.0
Beryllium	(Be, 6010)	75	2.0	ND
Cadmium	(Cd, 6010)	100	2.0	ND
Chromium-hexavalent	(7196)	500	0.1	ND
Chromium-total	(Cr, 6010)	2,500	2.0	264
Cobalt	(Co, 6010)	8,000	2.0	ND
Copper	(Cu, 6010)	2,500	2.0	10.0
Lead	(Pb, 6010)	1,000	2.0	ND
Mercury	(Hg, 245.5)	20	0.045	ND
Molybdenum	(Mo, 6010)	3,500	2.0	267
Nickel	(Ni, 6010)	2,000	2.0	ND
Selenium	(Se, SM3500Se-C)	100	0.19	ND
Silver	(Ag, 6010)	500	2.0	ND
Thallium	(Tl, 6010)	700	2.0	ND
Vanadium	(V, 6010)	2,400	2.0	6.6
Zinc	(Zn, 6010)	5,000	2.0	152

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106235

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REPORT

DUPLICATE

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-71

LABORATORY NO.: 48943-15

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: Hazardous Waste Evaluation per Title 22 California Administrative Code of Regulations pH Analysis of Water

pH, Units (EPA 150.1) 6.7

RESULTS

Parameter		TTLC*	MILLIGRAMS PER LITER Detection Limit	Concentration
Fluoride	(F, 340.2)	18,000	0.25	0.26
Antimony	(Sb, 6010)	500	0.01	ND
Arsenic	(As, SM3500As-B)	500	0.005	ND
Barium	(Ba, 6010)	10,000	0.01	ND
Beryllium	(Be, 6010)	75	0.01	ND
Cadmium	(Cd, 6010)	100	0.01	ND
Chromium-hexavalent	(7196)	500	0.01	ND
Chromium-total	(Cr, 6010)	2,500	0.01	ND
Cobalt	(Co, 6010)	8,000	0.01	ND
Copper	(Cu, 6010)	2,500	0.01	ND
Lead	(Pb, 6010)	1,000	0.01	ND
Mercury	(Hg, 245.5)	20	0.0005	ND
Molybdenum	(Mo, 6010)	3,500	0.01	ND
Nickel	(Ni, 6010)	2,000	0.01	0.01
Selenium	(Se, SM3500Se-C)	100	0.005	ND
Silver	(Ag, 6010)	500	0.01	ND
Thallium	(Tl, 6010)	700	0.01	ND
Vanadium	(V, 6010)	2,400	0.01	ND
Zinc	(Zn, 6010)	5,000	0.01	0.10

ND=Not detected, below detection limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

P. Mata

Patty Mata, Project Manager
Water and Waste Laboratory

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PMCOBUS0106236

REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6238
AREA CODE 213 • 225-1584
FAX 714 • 730-8462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-60

LABORATORY NO.: 48943-2

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)

RESULTS

Parameter	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
TCLP Chromium	EPA 6010	0.1	1.2

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106237

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REPORT

DUPLICATE

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH - DEVELOPMENT - TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-8462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-60

LABORATORY NO.: 48943-2

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)

RESULTS

Parameter	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
TCLP Chromium	EPA 6010	0.1	1.2

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106238

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-65

LABORATORY NO.: 48943-8

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)

RESULTS

Parameter	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
TCLP Chromium	EPA 6010	0.1	2.4

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

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PMCOBUS0106239

REPORT

DUPLICATE

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Hittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-65

LABORATORY NO.: 48943-8

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)

RESULTS

Parameter	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
TCLP Chromium	EPA 6010	0.1	2.4

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106240

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-66

LABORATORY NO.: 48943-9

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)

RESULTS

Parameter	Method	Detection Limit (MILLIGRAMS PER LITER)	Concentration (MILLIGRAMS PER LITER)
TCLP Chromium	EPA 6010	0.1	0.9

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106241

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REPORT

TRUESDAIL LABORATORIES, INC.

DUPLICATE

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-66

LABORATORY NO.: 48943-9

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)

RESULTS

Parameter	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
TCLP Chromium	EPA 6010	0.1	0.9

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

P. Mata

Patty Mata, Project Manager
Water and Waste Laboratory

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH - DEVELOPMENT - TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: **Mittlehauser Corporation**
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: **1352-20-67**

LABORATORY NO.: 48943-10

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: **TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)**

RESULTS

Parameter	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
TCLP Chromium	EPA 6010	0.1	3.3

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106243

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REPORT

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RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1584
FAX 714 • 730-6462

CLIENT: Hittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-67

LABORATORY NO.: 48943-10

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)

RESULTS

Parameter	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
TCLP Chromium	EPA 6010	0.1	3.3

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata, Project Manager
Water and Waste Laboratory

PMCOBUS0106244

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REPORT

TRUESDAIL LABORATORIES, INC.

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH — DEVELOPMENT — TESTING

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92680
AREA CODE 714 • 730-6239
AREA CODE 213 • 225-1564
FAX 714 • 730-6462

CLIENT: Mittlehauser Corporation
23272 Millcreek Dr., Suite 300
Laguna Hills, California 92653
Attention: Carl Kelley

DATE: January 20, 1992

DATE REC'D: December 23, 1991

SAMPLE: 1352-20-69

LABORATORY NO.: 48943-13

PROJECT: 1352-20, PG&E Topock

INVESTIGATION: TCLP Extraction per EPA Method 1311 (40 CFR 261 App. II)

RESULTS

Parameter	Method	MILLIGRAMS PER LITER Detection Limit	Concentration
TCLP Chromium	EPA 6010	0.1	3.8

The Maximum Regulatory Level for TCLP Chromium is 5.0 mg/l.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Patty Mata

Patty Mata, Project Manager
Water and Waste Laboratory

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PMCOBUS0106245

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 1352-20

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONARD / Eric Conard

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	TRC-(CA Method)	TCLP-Cr(T)	pH	* STLC	Cr+6	PRESERVATIVE	REMARKS
1	1352-20-59	12-19-91	0820	Sludge	P3-1 x	1	X	X	X	*	X	ICE	* SEE ATTACHED
2	1352-20-60		0830		P3-2	1		X					SAMPLE ANALYSIS
3	1352-20-61		0845		P3-3	1+2	X	X	X	*	X		REQUEST SHEET
4	1352-20-61D		0845		P3-3	1	X	X	X	*	X		FOR STLC INSTRUCTIONS.
5	1352-20-62		0865		P3-4	1	X	X	X	*	X		
6	1352-20-63		0909		P3-5	1	X	X	X	*	X		- REQUEST NORMAL
7	1352-20-64		0918		P3-6	1	X	X	X	*	X		T-A-T
8	1352-20-65		0945		P4-1	1		X					
9	1352-20-66		0955		P4-2	1		X					
10	1352-20-67		1005		P4-3	1		X					
11	1352-20-68		1015		P4-4	1	X	X	X	*	X		
12	1352-20-68D		1015		P4-4	1	X	X	X	*	X		
13	1352-20-69		1030		P4-5	1		X					
14	1352-20-70		1045		P4-6	1		X					
15	1352-20-71		1055	H_2O	EQUIP. BLANK	1	X		X		X		

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)		
Eric Conard	12/19/91	1330	Carl Kelley	12/20 12:30	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 15 / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 15
RELINQUISHED BY: (SIGNATURE) Carl Kelley	DATE 12/20	TIME 2:16	RECEIVED BY: (SIGNATURE) [illegible]		LABORATORY CONTACT: PATTY MATA
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) [illegible]		SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X)YES ( )NO

LABORATORY: TRUESDALE

LABORATORY PHONE NUMBER: (714) 730-6239

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS: PLEASE CONTACT CARL KELLEY @ (714) 587-2115 W/ RESULTS ASAP.

PMCOBUS0106246

PMCOBUS0106246

MITTELHAUSER corporation

23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1352

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) WAYNE CHIOU / Wayne Chiou

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	4A, 4B	5A, 5B	7	8	9B	10	PRESERVATIVE	REMARKS
B-3-2	8/28/90	1130	SOIL	BORING #3	1	X	X	X	X	X	X	ICE	
B-3-3		1135		" "	1	X	X	X	X	X	X		
B-3-4		1143		" "	1	X	X	X	X	X	X		
B-3-5		1150		" "	1	X	X	X	X	X	X		
B-3-6		1205		" "	1	X	X	X	X	X	X		
B-3-7		1210		" "	1	X	X	X	X	X	X		
B-4-1		1245		BORING #4	1	X	X	X	X	X	X		
B-4-2		1255		" "	1	X	X	X	X	X	X		
B-4-3		1300		" "	1	X	X	X	X	X	X		
B-4-4		1310		" "	1	X	X	X	X	X	X		
B-4-5		1318		" "	1	X	X	X	X	X	X		
B-4-6		1330		" "	1	X	X	X	X	X	X		
B-4-7		1340		" "	1	X	X	X	X	X	X		
B-4-8		1345		" "	1	X	X	X	X	X	X		
1352-20-28	8/29/90	0855	SLUDGE	PZ-1	1	X	X	X	X	X	X		
1352-20-29	S	0905	SAND	PZ-1	1	X	X	X	X	X	X		

RELINQUISHED BY: (SIGNATURE) Wayne Chiou	DATE 8/30/90	TIME 6:00 P.M.	RECEIVED BY: (SIGNATURE) Phil Alcantar	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) / LABORATORY: ENSECO-CRL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: MARK KING / LABORATORY PHONE NUMBER: (714) 898-6370
RELINQUISHED BY: (SIGNATURE) Phil Alcantar	DATE 8/30/90	TIME 7:20 PM	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106247

PMCOBUS0106247

PMCOBUS0106248

Enseco

7440 Lincoln Way, Garden Grove, CA 92841, (714) 898 6370
☐ 2610 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442-8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 4-19-90 Page 3 of 3

Lab Number _____

CLIENT Enseco / OXL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (240.2)							Sample Condition/ REMARKS
G-9010905-021 / 1352-20-21	4/17					✓	1	✓							
022 22															
023 23															
024 24															
025 25															
026 26															
027 27															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time	The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.
Relinquished by: (Signature)	Received by: (Signature)	Date	Time	

Relinquished by: (Signature)	Date	Time	Received for Laboratory by:	Date RECEIVED	Time	Date ACCEPTED	Time
			R. Phelan	4-20-90	9:30		

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106248

PMCOBUS0106255

MITTELHAUSER corporation
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 3

PROJECT NUMBER: 1352

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONARO / [signature] WAYNE CHOU / [signature]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	4A	4C	5A	5B	7B	9B	10	PRESERVATIVE	REMARKS
B-1-1	8/28/90	0815	SOIL	BORING #1	1	X	X	X	X	X	X		ICE	
B-1-2		0823		" "	1	X	X	X	X	X	X			
B-1-3		0827		" "	1	X	X	X	X	X	X			
B-1-4		0834		" "	1	X	X	X	X	X	X			
B-1-5		0845		" "	1	X	X	X	X	X	X			
B-1-6		0850		" "	1	X	X	X	X	X	X			
B-1-7		0900		" "	1	X	X	X	X	X	X			
B-2-1		0935		BORING #2	1	X	X	X	X	X	X			
B-2-2		0946		" "	1	X	X	X	X	X	X			
B-2-3		0945		" "	1	X	X	X	X	X	X			
B-2-4		0955		" "	1	X	X	X	X	X	X			
B-2-5		1000		" "	1	X	X	X	X	X	X			
B-2-6		1010		" "	1	X	X	X	X	X	X			
B-2-7		1015		" "	1	X	X	X	X	X	X			
B-2B		1020		" "	1	X	X	X	X	X	X			
B-3-1		1125		BORING #3	1	X	X	X	X	X	X			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY:
[signature]	8/29/90	1815	[signature]		ENSECO-CRL
RELINQUISHED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**LABORATORY CONTACT:**	**LABORATORY PHONE NUMBER:**
[signature]	8/30/90	7:20 AM.		MARK KING	(714) 898-6370
RELINQUISHED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED FOR LABORATORY BY: (SIGNATURE)**	**SAMPLE ANALYSIS REQUEST SHEET ATTACHED:**	
			[signature]	(X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106256

PMCOBUS0106256

Enseco
A CORNING Company

☒ 7440 Lincoln Way, Garden Grove, CA 92641, (714) 898-5370
☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922-2778
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442 8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 8/31/90 Page 5 of 5

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2)							Sample Condition/ REMARKS
(G-9024220-041) 1352-20-38	8/29					✓	1	✓							
042 39															
043 40															
044 41															
045. 42															
046 43															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time	The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.
Relinquished by: (Signature)	Received by: (Signature) FED EX	Date 8/31	Time 1750	

Relinquished by: (Signature)	Date	Time	Received for Laboratory by:	Date RECEIVED	Time	Date ACCEPTED	Time
FED EX				9/4/90	9:00		

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106257

Enseco
A CORNING Company

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☐ 2810 Bonsen Ave., Unit A Ventura, CA 93003, (805) 650-0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922-2778
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442-8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 8/31/90 Page 4 of 5
Lab Number

CLIENT ENSECO / CRL
ADDRESS
PROJECT NAME
CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER
PHONE NUMBER
SITE CONTACT

ANALYSES: F (340.2)

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2)							Sample Condition/ REMARKS
(G-90242220-031) 1352-20-28	8/29					✓	1	✓							
032 29															
033 30															
034 31															
035 32															
036 33															
037 34															
038 35															
039 36															
040 37															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature) FED EX	Date 8/31	Time 1750

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Relinquished by: (Signature)	Date	Time	Received for Laboratory by:	Date RECEIVED	Time	Date ACCEPTED	Time
FED EX				9/4/90	9:00		

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

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PMCOBUS0106258

Enseco
A CORNING Company

☒ 7440 Lincoln Way, Garden Grove, CA 92641, (714) 898 6370
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☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922-2778
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442-8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 8/31/90 Page 3 of 5

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2)							Sample Condition/ REMARKS
(G-9024220-021) B-3-6	8/28					✓	~~8/pt~~	✓							
022 7															
023 B-4-1															
024 2															
025 3															
026 4															
027 5															
028 6															
029 7															
030 8															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
	FED EX	8/31	1750

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Relinquished by: (Signature)	Date	Time	Received for Laboratory by:	Date	RECEIVED	Time	Date	ACCEPTED	Time
FED EX				9/1/90		9:00			

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

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Enseco

☒ 7440 Lincoln Way, Garden Grove, CA 92641, (714) 898 6370
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☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442-8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 4-19-90 Page 1 of 3

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME
MITTELHAUSER # 1352-20 / PG & E TOPOCK

CONTRACT / PURCHASE ORDER / QUOTE #
G-9010905 / /

PROJECT MANAGER
KEVIN DODDS

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2*)							Sample Condition/ REMARKS
(G-9010905-001) 1352-20-01	4/17					✓	1	✓							
002 02															
003 03															
004 04															
005 05															
006 06															
007 07															
008 08															
009 09															
010 10															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature) [signature]	Received by: (Signature)	Date	Time

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Relinquished by: (Signature)	Date	Time	Received for Laboratory by:	Date RECEIVED	Time	Date ACCEPTED	Time
			R. Phelan	4-20-90	9:30		

Method of Shipment:

Special Instructions
* ACID DISTILLATION AND SELECTIVE ION ELECTRODE
ANALYSIS OF DISTILLATE. RUSH ON #'s 13, 14, & 15 ONLY

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION. White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

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Enseco
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☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922-2776
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442 8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 8/31/90 Page 2 of 5

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2)							Sample Condition/ REMARKS
(G9024220-011) B-2-4	8/28					✓	1	✓							
012 5															
013 6															
014 7															
015 8															
016 B-3-1															
017 2															
018 3															
019 4															
020 5															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature) FED EX	Date 8/31	Time 1750
Relinquished by: (Signature) FED EX	Received for Laboratory by:	Date RECEIVED 9/4/90	Time 9:00

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Date	Time	Date ACCEPTED	Time

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106260

TO: BROWN & CALDWELL

Enseco
A CORNING Company

☐ 440 Lincoln Way, Garden Grove, CA 92841, (714) 898 6370
☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442-8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 8/31 Page 1 of 5

Lab Number

CLIENT ENSECO/CRL

ADDRESS

PROJECT NAME
MITTELHAUSER # 1352 / PG & E - TOPOCK

CONTRACT / PURCHASE ORDER / ~~QUOTE #~~
G-9024220 /

PROJECT MANAGER
KEVIN DODDS

PHONE NUMBER
714-898-6370

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	FLUORIDE (340.2)							Sample Condition/ REMARKS
(G-9024220-001) B-1-1	8/28					✓	1	✓							
002 2															
003 3															
004 4															
005 5															
006 6															
007 7															
008 B-2-1															
009 2															
010 3															

SAMPLERS: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature) FED EX	Date 8/31	Time 1750
Relinquished by: (Signature) FED EX	Received for Laboratory by:	Date / Time	

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

RECEIVED Date	RECEIVED Time	ACCEPTED Date	ACCEPTED Time
9/1/00	9:00		

Method of Shipment:
FEDEX AB # 808443976

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106261

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PMCOBUS0106262

MITTELHAUSER corporation
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 1352-20

PROJECT NAME: PGAE TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONARD - Eric Conard

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a, 4b, 4c	5a, 5b	7	8	10		PRESERVATIVE	REMARKS
-1	1352-20-10D	4-17-90	1140	GRAB	P1-4	1	X	X	X	X	X			PLEASE RETURN
-2	1352-20-17D	"	1215	GRAB	P1-6	1	X	X	X	X	X			WHITE COPY OF
-3	1352-20-27D	"	1325	COMPOSITE	P4-2	1	X	X	X	X	X			C-O-C W/ REPORT

* SHIPPED SAMPLES UPS NEXT DAY

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 3	LABORATORY:
Eric Conard	4/18/90	1300		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 3	BC LABORATORIES, INC.
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: RICH EGLIN	LABORATORY PHONE NUMBER: (805) 327-4911
RELINQUISHED BY: (SIGNATURE)	DATE 4/19/90	TIME 9:50AM	RECEIVED FOR LABORATORY BY: (SIGNATURE) Joan Mafsby	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

...rporation
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 1352-20

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONARD - Eric Conard

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4a, 4b, 4c	5a, 5b	7	8	10		PRESERVATIVE	REMARKS
1352-20-17	4-17-90	1215	GRAB	P1-6	1	X	X	X	X	X			Please return
1352-20-18		1215	Composite	P1-6	1	X	X	X	X	X			white copy of
1352-20-19		1225	GRAB	P2-5	1	X	X	X	X	X			C.O.C w/ report
1352-20-20		1225	"	P2-5	1	X	X	X	X	X			
1352-20-21		1230	Composite	P2-5	1	X	X	X	X	X			
1352-20-22		1330	GRAB	P3-2	1	X	X	X	X	X			
1352-20-23		1330	"	P3-2	1	X	X	X	X	X			
1352-20-24		332	Composite	P3-2	1	X	X	X	X	X			
1352-20-25		1335	GRAB	P4-2	1	X	X	X	X	X			
1352-20-26		1335	"	P4-2	1	X	X	X	X	X			
1352-20-27		1335	Composite	P4-2	1	X	X	X	X	X			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 27 / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 27	LABORATORY: ENSECO-CRL
Eric Conard	4/18/90	1401			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER: (714) 898-6370
	4/18/90	18:00			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS: ENSECO QUOTATION NUMBER, M0109901, LJC

PMCOBUS0106263

PMCOBUS0106264

MITTELHAUSER corporation
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 2

PROJECT NUMBER: 1352-20

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC COUARD

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 49	4b 4c	59 5b	7	8	10	PRESERVATIVE	REMARKS
1352-20-01	4-17-90	1035	GRAB	P1-1	1	X	X	X	X	X			PLEASE RETURN
1352-20-02		1040	"	P1-1	1	X	X	X	X	X			WHITE COPY OF
1352-20-03		1045	COMPOSITE	P1-1	1	X	X	X	X	X			C-O-C W/ REPORT
1352-20-04		1050	GRAB	P1-2	1	X	X	X	X	X			
1352-20-05		1050	"	P1-2	1	X	X	X	X	X			
1352-20-06		1100	COMPOSITE	P1-2	1	X	X	X	X	X			
1352-20-07		1120	GRAB	P1-3	1	X	X	X	X	X			
1352-20-08		1125	"	P1-3	1	X	X	X	X	X			
1352-20-09		1130	COMPOSITE	P1-3	1	X	X	X	X	X			
1352-20-10		1140	GRAB	P1-4	1	X	X	X	X	X			
1352-20-11		1140	"	P1-4	1	X	X	X	X	X			
1352-20-12		1146	COMPOSITE	P1-4	1	X	X	X	X	X			
1352-20-13		1200	GRAB	P1-5	1	X	X	X	X	X	*		* REQUEST 5-DAY
1352-20-14		1200	"	P1-5	1	X	X	X	X	X	*		* TURNAROUND ON
1352-20-15		1205	COMPOSITE	P1-5	1	X	X	X	X	X	*		* THESE 3 SAMPLES.
1352-20-16		1215	GRAB	P1-6	1	X	X	X	X	X			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 27	LABORATORY:
	4/18/90	2:01		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 27	ENSECO-CRL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER:
	4/18/90	18:00			(714) 898-6370
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X)YES ( )NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:
ENSECO QUOTATION NUMBER: M0109901.LJC.

PMCOBUS0106264

PMCOBUS0106265

Enseco

7440 Lincoln Way, Garden Grove, CA 92641, (714) 898 6370
☐ 2610 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650 0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922 2776
☐ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442-8400
☐ Mobile Labs, (800) ENSECO 8

CHAIN OF CUSTODY RECORD

Date 4-19-90 Page 2 of 3

Lab Number

CLIENT Enseco/CRL

ADDRESS

PROJECT NAME

CONTRACT / PURCHASE ORDER / QUOTE #

PROJECT MANAGER

PHONE NUMBER

SITE CONTACT

ANALYSES

Sample No. / Identification	Date	Time	Lab Sample Number	SAMPLE TYPE LIQ.	AIR	SOLID	No. of Containers	F (340.2)							Sample Condition/ REMARKS
G-900905-011 / 1352-20-11	4/17					✓	1	✓							
012 12															
013 13															RUSH! 5 day
014 14															RUSH! as
015 15															RUSH! per
016 16															Analyst
017 17															Eric Ngo
018 18															
019 19															
020 20															

SAMPLERS: (Signature)

Received by: (Signature) | Date | Time

Relinquished by: (Signature)

Received by: (Signature) | Date | Time

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Relinquished by: (Signature) | Date | Time

Received for Laboratory by: R. Phelan

Date RECEIVED	Time	Date ACCEPTED	Time
4-20-90	9:30		

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: _____ days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

PMCOBUS0106249

MITTELHAUSER corporation
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 3 OF 3

PROJECT NUMBER: 1352

PROJECT NAME: PG#E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) WAYN CHIOU / Wayne Chiou

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4A, 4C	5A, 5B	7	8	9B	10	PRESERVATIVE	REMARKS
1352-20-30	8/29/90	0840	SLUDGE	P2-1	1	X	X	X	X	X	X	ICE	
1352-20-31		0845	SAND	P2-2	1	X	X	X	X	X	X		
1352-20-32		0925	SLUDGE	P2-3	1	X	X	X	X	X	X		
1352-20-33		0930	SAND	P2-3	1	X	X	X	X	X	X		
1352-20-34		0945	SLUDGE	P2-4	1	X	X	X	X	X	X		
1352-20-35		0950	SAND	P2-4	1	X	X	X	X	X	X		
1352-20-36		1025	SLUDGE	P2-6	1	X	X	X	X	X	X		
1352-20-37		1030	SAND	P2-6	1	X	X	X	X	X	X		
1352-20-38		1609	SLUDGE	P4-1	1	X	X	X	X	X	X		
1352-20-39		1630	SAND	P4-1	1	X	X	X	X	X	X		
1352-20-40		1610	SLUDGE	P4-3	1	X	X	X	X	X	X		
1352-20-41		1655	SLUDGE	P4-5	1	X	X	X	X	X	X		
1352-20-42		1720	SAND	P4-5	1	X	X	X	X	X	X		
1352-20-43		1700	SLUDGE	P4-6	1	X	X	X	X	X	X		

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY:
Wayne Chiou	8/29/90	8:15	Paul Alcantar		ENSECO-CRL
RELINQUISHED BY: (SIGNATURE) Paul Alcantar	DATE 8/30/90	TIME 7:20 PM	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: MARK KING	LABORATORY PHONE NUMBER: (714) 898-6370
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X)YES ( )NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106249

MITTELHAUSER corporation
23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 1352

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) WAYNE CHIOU / Wayne Chiou

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 4A, 4C	5A, 5B	7	8	9B	10	PRESERVATIVE	REMARKS
B-1-5D	8/28/90	0845	SOIL	BORING No. 1	1	X	X	X	X	X	X	ICE	
B-2-6D		1010		BORING No 2	1	X	X	X	X	X	X		
B-4-4D		1310		BORING No 4	1	X	X	X	X	X	X		
B-4-6D		1330		BORING No 4	1	X	X	X	X	X	X		
1352-20-38D	8/29/90	1609	SLUDGE	P4-1	1	X	X	X	X	X	X		
1352-20-39D		1636	SAND	P4-1	1	X	X	X	X	X	X		

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY:
Wayne Chiou	8/30	1650	T Kimell (UPS)		BC
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: RICH EGLIN	LABORATORY PHONE NUMBER: (805) 327-4911
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X) YES ( ) NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
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REMARKS:

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LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE ___ OF ___

PROJECT NUMBER: 1352-20

PROJECT NAME: PG&E TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC LENARD

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): VOC	SVOC	TCLP (Cd, Cr, Pb)	TOTAL (Cd, Cr, Pb)	ARCHIVED	PRESERVATIVE	REMARKS
1352-20-44	10/8/01		SOIL	P1-1 SEDIMENT	1	X	X	X				
1352-20-44D				P1-1 "	1	X	X	X		X		
1352-20-45				P1-2 "	1					X		REQUEST SAMPLE
1352-20-46				P1-3 "	1					X		F-A-T
1352-20-47				P1-4 "	1					X		
1352-20-48				P1-5 "	1	X	X	X				
1352-20-49				P1-6 "	1					X		
1352-20-50				P1-6 SAND	1	X		X				
1352-20-51				P2-1 SEDIMENT	1					X		
1352-20-52				P2-2 "	1					X		
1352-20-53				P2-3 "	1					X		
1352-20-54				P2-4 "	1					X		
1352-20-54D				P2-4 "	1					X		
1352-20-55				P2-5 "	1					X		
1352-20-56				P2-6 "	1					X		
1352-20-57				P2-6 SAND	1	X		X				

RELINQUISHED BY: (SIGNATURE)	DATE 10/8/01	TIME	RECEIVED BY: (SIGNATURE) EQ. BLANK	TOTAL NO. OF SAMPLES (THIS SHIPMENT) / TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	LABORATORY: TRUESDAIL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT:	LABORATORY PHONE NUMBER: (714) 730-6237
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
GOLD, LABORATORY
PINK, CLIENT
GREEN, PROJECT FILE

REMARKS:

PMCOBUS0106252

MITTELHAUSER corporation
23272 MILL CREEK ROAD, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 2

PROJECT NUMBER: 1552-20

PROJECT NAME: [illegible] ROCK

SAMPLED BY: (PRINTED AND SIGNATURE) [illegible]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TLC-Cr	TCLP-Cr	TLC-Cr	TOTAL Cr (H_2O)	Asbestos	PRESERVATIVE	REMARKS
1552-20-44	10/6/91	1037	SOIL	F1-1 SOIL	1	X	X	X			ICE	
1552-20-44D		1037		F1-1 SOIL	1					X		REQUEST
1552-20-45		1041		F1-2 SOIL	1					X		5 DAY T-A-T
1552-20-46		1041		F1-3 SOIL	1					X		
1552-20-47		1055		F1-4 SOIL	1					X		
1552-20-48		1026		F1-5 SOIL	1	X	X	X				
1552-20-49		1012		F1-6 SOIL	1					X		
1552-20-50		1014		F1-6 SAND	1	X	X					
1552-20-51		1021		F2-1 SOIL	1					X		
1552-20-52		1031		F2-2 SOIL	1					X		
1552-20-53		1040		F2-3 SOIL	1					X		
1552-20-54		1047		F2-4 SOIL	1					X		
1552-20-54D		1047		F2-4 SOIL	1					X		
1552-20-55		1051		F2-5 SOIL	1					X		
1552-20-56		1142		F2-6 SOIL	1					X		
1552-20-57	10/6/91	1108	SOIL	F2-6 SAND	1	X	X				ICE	

RELINQUISHED BY: (SIGNATURE) [illegible]	DATE 10/7/91	TIME [illegible]	RECEIVED BY: (SIGNATURE) [illegible]	TOTAL NO. OF SAMPLES (THIS SHIPMENT) [illegible] / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) [illegible]	LABORATORY: TUCSDALE
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: JULIA	LABORATORY PHONE NUMBER: (714) 730-6239
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
CANARY, LABORATORY
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REMARKS: [illegible]

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PMCOBUS0106253

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23272 MILL CREEK DRIVE, SUITE 300
LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

PROJECT NUMBER: 1352-20

PROJECT NAME: IGAE TOPECK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CUNALO / [illegible]

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TOTAL Cr (Hex)						PRESERVATIVE	REMARKS
1352-20-58	10-8-91	0952	H_2O	EQUIPMENT RINSE	1	X						ICE	REQUEST 5 DAY T-AT

RELINQUISHED BY: (SIGNATURE) [illegible]	DATE 10/8/91	TIME 1257	RECEIVED BY: (SIGNATURE) [illegible]	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 17 / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 17	LABORATORY: TRUCODAL
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: JULIA	LABORATORY PHONE NUMBER: (714) 730-6239
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO	

DISTRIBUTION: WHITE, MITTELHAUSER CORPORATION
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REMARKS: [illegible]

MITTELHAUSER corporation
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LAGUNA HILLS, CALIFORNIA 92653
(714) 472-2444

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 1352-20

PROJECT NAME: IGNE TOPOCK

SAMPLED BY: (PRINTED AND SIGNATURE) ERIC CONARD / [signature]

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TTLC-CRAMATAN+F	TCLP-Cr(T)	PH	* STLC	+6	PRESERVATIVE	REMARKS
1	1352-20-59	12-19-91	0820	SLUDGE	P3-1 x	1	X	X	X	*	X	ICE	* SEE ATTACHED
2	1352-20-60		0830		P3-2	1		X					SAMPLE ANALYSIS
3	1352-20-61		0845		P3-3	1+2	X	X	X	*	X		REQUEST SHEET
4	1352-20-61D		0845		P3-3	1	X	X	X	*	X		FOR STLC INSTRUCTIONS.
5	1352-20-62		0855		P3-4	1	X	X	X	*	X		
6	1352-20-63		0909		P3-5	1	X	X	X	*	X		- REQUEST NORMAL
7	1352-20-64		0918		P3-6	1	X	X	X	*	X		T-A-T
8	1352-20-65		0945		P4-1	1		X					
9	1352-20-66		0955		P4-2	1		X					
10	1352-20-67		1005		P4-3	1		X					
11	1352-20-68		1015		P4-4	1	X	X	X	*	X		
12	1352-20-68D		1015		P4-4	1	X	X	X	*	X		
13	1352-20-69		1030		P4-5	1		X					
14	1352-20-70		1045		P4-6	1		X					
15	1352-20-71		1055	H_2O	EQUIP. BLANK	1	X		X		X		

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)		
[signature]	12/19/91	1330	[signature]	12/20 1030	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 15 / TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 15
RELINQUISHED BY: (SIGNATURE) [signature]	DATE 12/20	TIME 2:16	RECEIVED BY: (SIGNATURE) [signature]	LABORATORY CONTACT: PETTY MATA	LABORATORY PHONE NUMBER: (714) 730-6239
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) [signature]	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: (X)YES ( )NO	

LABORATORY: TRUESDALE

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PINK, CLIENT
GREEN, PROJECT FILE

REMARKS: PLEASE CONTACT CARL KELLEY @ (714) 587-2115 W/ RESULTS ASAP.

PMCOBUS0106254

PMCOBUS0106254

EE 0302167

Ecology and Environment, Inc.
Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

ACCREDITED IN ACCORDANCE WITH nelac

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

March 18, 2003

Mr. Ralph Lambert
E and E San Francisco Office
350 Sansome St., #300
San Francisco, CA 94104

RE: PG&E Topock Compressor Sta.
CostPoint ID: **001137.GE02.08..**

Work Order No.: **0302167**

Dear Mr. Ralph Lambert,

Ecology and Environment, Inc. received 20 samples on Friday, February 21, 2003 for the analyses presented in the following report.

E & E will retain the samples addressed in this report for 30 days, unless otherwise instructed by the client. If additional storage is requested, the storage fee is $1.00 per sample container per month, to accrue until the client authorizes sample destruction.

This report is not to be reproduced, except in full, without the written approval of the laboratory.

Sincerely,

Tony Bogolin
Project Manager

CC:
Enclosures as note

CHAIN OF CUSTODY RECORD

ASC analytical services center

Ecology and Environment, Inc., Analytical Services Center
4493 Walden Avenue, Lancaster, New York, 14086, Tel: 716/685-8080, Fax 716/685-0852
Where Scientific Excellence and Efficiency Meet

Cooler No: _____
Lab: _____
Page: 1 of 2

PROJECT No: 0011376E0208
CLIENT: PG&E
LOCATION: (Include State) Needles, California
SITE NAME: PG&E Topak Compressor Station
PROJECT MANAGER: Steve Morin
OFFICE No.: 415-981-2811
FIELD TEAM LEADER: Ralph Lambert
PHONE No.: 415-317-1752
SAMPLERS: (PRINT) H. Brunelle, R. Lambert

CONTAINER TYPE AND PRESERVATIVE: Wgrres

TURNAROUND TIME: 24-HOUR ☐ 48-HOUR ☐ 1-WEEK ☐ STANDARD ☒ OTHER _____ (RUSH)

REQUESTED ANALYSIS

DATE	TIME	SAMPLE ID	MATRIX CODE	CHECK FOR MS/MSD	No. OF CONTAINERS	Title 22 Metals	Hexavalent Chromium	pH	% Moisture	Total Cr, Cu, Ni, Zn					OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
02/19/03	1430	BGW-1-1	SO		1	X	X	X	X									
"	1428	BGW-1S	SO		1		X	X	X	X								
"	1340	BGW-3S	SO		1		X	X	X	X								
"	1345	BGW-3-1	SO		1	X	X	X	X									
"	1440	BGW-2S	SO		1		X	X	X	X								
"	1445	BGW-2-1	SO		1	X	X	X	X									
"	1355	BGW-4S	SO		1		X	X	X	X								
"	1330	BGW-4-1	SO		1	X	X	X	X									
2/20/03	0750	L2-S	SO		2	X	X	X	X									
2/20/03	0800	L2-2	SO		2	X	X	X	X									

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Temperature Blank Info. Enclosed: Yes No	LAB PROJECT No.:	LAB PROJECT MANAGER:
[signature]	02/20/03 1300	UPS	02/20/03 1200			
Relinquished By: (Signature) UPS	Date/Time:	Received By: (Signature) [signature]	Date/Time: 2/21/03 735	Ship Via: UPS Date: 2/20/03	(FOR LAB USE ONLY) Date: _____ Time: _____	
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number: 1Z 849 R5 321 1000 1880	Temperature: _____ °C Work Order No: _____	

Distribution: White - Lab original Yellow - Field team leader/Project Manager

F1260699.P65

2

CHAIN OF CUSTODY RECORD

ASC analytical services center

Ecology and Environment, Inc., Analytical Services Center
4493 Walden Avenue, Lancaster, New York, 14086, Tel: 716/685-8080, Fax 716/685-0852
Where Scientific Excellence and Efficiency Meet

Cooler No: _____
Lab: _____
Page: 2 of 2

PROJECT No: 001137GE0208
CLIENT: PG&E
LOCATION: (Include State) Needles, California
SITE NAME: PG&E Topock Compressor Station
PROJECT MANAGER: Steve Morin
OFFICE No.: 415 981 2811
FIELD TEAM LEADER: Ralph Lamber
PHONE No.: 415 317 1752
SAMPLERS: (PRINT) H. Brunelle, R. Lambert

CONTAINER TYPE AND PRESERVATIVE: No Pres.

TURNAROUND TIME: 24-HOUR ☐ 48-HOUR ☐ 1-WEEK ☐ STANDARD ☒ OTHER _____ (RUSH)

REQUESTED ANALYSIS

DATE	TIME	SAMPLE ID	MATRIX CODE	CHECK FOR MS/MSD	No. OF CONTAINERS	Title 22 Metals	Hexavalent Chromium	pH	% Moisture	General Minerals	Total Cr, Cu, Ni, Zn				OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
2/20/03	0811	L1-S	SO		2	X	X	X	X									
"	0820	L1-2	SO		2	X	X	X	X									
"	0840	L3-S	SO		2	X	X	X	X									
"	0845	L3-1	SO		2	X	X	X	X	X								R. Lambert will call
"	0850	L3-1.5	SO		2	X	X	X	X									
"	0940	AOC 2A	SO		1		X	X	X		X							
"	0945	AOC 2B	SO		1		X	X	X		X							
"	0950	AOC 3A	SO		1		X	X	X		X							
"	1000	AOC 3C	SO		1		X	X	X		X							
"	0955	AOC 3B	SO		1		X	X	X		X							

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Temperature Blank Info. Enclosed: Yes (No)	LAB PROJECT No.:	LAB PROJECT MANAGER:
[signature]	02/20/03 1200	UPS	02/20/03 1200			
Relinquished By: (Signature) UPS	Date/Time:	Received By: (Signature) [signature]	Date/Time: 2/21/03 735	Ship Via: UPS Date: 2/20/03	(FOR LAB USE ONLY) Date: _____ Time: _____	
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number: 1Z8A9R5321100018 80	Temperature: _____ °C Work Order No: _____	

Distribution: White - Lab original Yellow - Field team leader/Project Manager

F1260699.P65

Ecology and Environment, Inc. Analytical Services Center

Cooler Receipt Form

PACKAGE RECEIPT #: 11650 NUMBER OF COOLERS: 1 DATE RECEIVED: 2/21/03

E & E PROJECT #: _____ PROJECT OR SITE NAME: E+E San Fran

A. Preliminary Examination Phase

CIRCLE ONE

1. Did coolers come with airbill or packing slip? _____ YES NO NA

   Enter carrier here and print airbill # below: *(Circle One)* FedEx Airborne Client Other

   Ship as high hazard or dangerous goods YES NO NA

2. Did cooler(s) have custody seals? _____ YES NO NA
3. Were custody seals unbroken and intact on receipt? _____ YES NO* NA
4. Were custody seals dated and signed? _____ YES NO NA
5. Sign here to acknowledge receipt of cooler (s): _____

   Date cooler(s) opened: 2/21/03 C-O-C numbers: _____

   Cooler(s) opened by (print): J Henderson Signature: _____

6. Were the C-O-C forms received? _____ YES NO* NA
7. Was the project identifiable from the C-O-C form? _____ YES NO* NA
   If YES, enter the project number and name in the heading above.

Please record Temperature Blank Vial or Cooler Temperature for Each Cooler, Range (2 - 6C)* NJDEP must be ≤4C

AIRBILL #	TEMP. °C	AIRBILL #	TEMP. °C	AIRBILL #	TEMP. °C
1Z8A9R532110001880	5.5				

Thermometer # 129 Correction Factor +0.5 * If No or Temperature Outside of Acceptable Range, prepare a PM Notification form.

B. Unpacking Phase

8. Was enough packing material used in cooler(s)? _____ YES NO NA
   Type of material: ☐ Vermiculite ☒ Bubble Wrap ☐ Other
9. If required, was enough ice used? _____ YES NO NA
   If YES, type of ice used: ☒ Wet ☐ Dry ☐ Blue ☐ Other
10. Was a temperature blank vial included inside cooler(s)? _____ YES NO NA
    If YES, indicate temperature blank vial temperature in table above. If NO, indicate cooler temperature in table above.
11. Were all containers sealed in separate plastic bags? _____ YES NO NA
12. Did all containers arrive unbroken and in good condition? _____ YES NO* NA
13. Samples stored in W Cooler before Login Phase? YES NO
    If yes: Signature In: _____ Date/Time: _____

    Signature Out: _____ Date/Time: _____

C. Login Phase

Samples Logged in By (print): J Henderson Signature: _____ Date: 2/21/03

14. Were all container labels complete (e.g. date, time preserved)? _____ YES NO* NA
15. Were all C-O-C forms filled out properly in ink and signed? _____ YES NO* NA
16. Did the C-O-C form agree with containers received? _____ YES NO* NA
17. Were the correct containers used for the tests requested? _____ YES NO* NA
18. Were the correct preservatives listed on the sample labels? _____ YES NO* NA
19. Was a sufficient sample volume sent for the tests requested? _____ YES NO* NA
20. Were all volatile samples received without head space? _____ YES NO* NA

*Prepare a PM Notification form.

L:\Forms & Lists\Final\F_034.cue\Rev \Approval Date5/1/00Last Update:

Bogolin, Tony

From: Lambert, Ralph
Sent: Monday, February 24, 2003 5:48 PM
To: Bogolin, Tony
Subject: General minerals for Topock soil sample L3-1

For the Topock soil sample L3-1, collected 2/20/03, please also analyze for the general minerals HCO3, CO3, Na, Ca, Mg, Cl, and SO4.

Thanks,

Ralph Lambert

Ecology and Environment, Inc.
Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

Client:	E AND E SAN FRANCISCO
Project:	PG&E Topock Compressor Sta.
Lab Order:	0302167

CASE NARRATIVE

Only one container was received for samples L2-S, L2-2, L1-S and L1-2. Two containers were indicated on the chain-of-custody form. Sufficient sample is present in the one container to perform all analyses requested.

METALS
Sample Analysis
All samples were digested and analyzed within hold time.

Samples BGW-1-1, BGW-3-1, BGW-2-1, BGW-4-1, L2-S, L2-2, L1-2, L3-S were diluted for Thallium due to marix interference. Samples BGW-3-1, BGW-2-1, BGW-4-1, L2-S, L1-S, L3-1 were diluted for Antimony due to matrix interference. Samples L2-2 and L3-1 were diluted for Selenium due to matrix interference. Sample L3-1 was diluted for Molybdenum due to matrix interference.

Calibrations
Calibration of the ICP utilizes a zero and one non-zero standard to determine the linear equation for quantitation. A low concentration standard (PQL) is analyzed at the reporting level.

All initial and continuing calibrations were acceptable.

QC
All calibration blank analyses were acceptable. The method blank contained Sodium at a level between the method detection limit and the reporting limit. Sodium results have been flagged "B".

All matrix spike/spike duplicate (MS/MSD) recoveries were acceptable for sample BGW-1-1except for Calcium, Magnesium and Antimony. Calcium and Magnesium were present in the sample at levels greater than nine times the spike amount. RPD values were acceptable except for Calcium and Barium.

All laboratory control sample (LCS) recoveries were acceptable.

MERCURY
Sample Analysis
All samples were digested and analyzed within hold time.

Calibrations
All initial and continuing calibrations were acceptable.

QC
All calibration and preparation blank analyses were acceptable.

All matrix spike/spike duplicate (MS/MSD) recoveries and RPD values were acceptable.

All laboratory control sample (LCS) recoveries were acceptable.

GENERAL ANALYTICAL CHEMISTRY
Sample Analysis
All samples were analyzed within hold time.

Calibrations
All initial and continuing calibration standards were acceptable.

QC
All calibration and preparation blank analyses were acceptable.

All matrix duplicates/matrix spikes (MD/MS) were acceptable except the hexavalent chromium MS of sample BGW-1-1 was low due to matrix interferences. The soil hexavalent chromium PVS was acceptable.

All laboratory control sample (LCS) recoveries were acceptable.

Ecology and Environment, Inc.

Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

Lab Order: 0302167
Client: E and E San Francisco Office
Project: PG&E Topock Compressor Sta.

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Received Date	Matrix	Test Name	TCLP Date*	Prep Date	Analysis Date
0302167-01A	BGW-1-1	2/19/2003 2:30:00 PM	2/21/2003 7:35:00 AM	Soil	Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/28/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-02A	BGW-1S	2/19/2003 2:28:00 PM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-03A	BGW-3S	2/19/2003 1:40:00 PM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-04A	BGW-3-1	2/19/2003 1:45:00 PM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-05A	BGW-2S	2/19/2003 2:40:00 PM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-06A	BGW-2-1	2/19/2003 2:45:00 PM			Hexavalent Chromium by 7196A/3060A			2/25/2003

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM

**Reflects Date of TCLP Extraction Completion. For Re-extracted samples (*RE) reflects the TCLP Extraction from the original sample unless the date differs from the original sample's TCLP extraction date which indicates TCLP extraction was also re-done.*

Ecology and Environment, Inc.

Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

Lab Order: 0302167
Client: E and E San Francisco Office
Project: PG&E Topock Compressor Sta.

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Received Date	Matrix	Test Name	TCLP Date*	Prep Date	Analysis Date
0302167-06A	BGW-2-1	2/19/2003 2:45:00 PM	2/21/2003 7:35:00 AM	Soil	Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-07A	BGW-4S	2/19/2003 1:55:00 PM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-08A	BGW-4-1	2/19/2003 1:30:00 PM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-09A	L2-S	2/20/2003 7:50:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/27/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-10A	L2-2	2/20/2003 8:00:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/27/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM

**Reflects Date of TCLP Extraction Completion. For Re-extracted samples (*RE) reflects the TCLP Extraction from the original sample unless the date differs from the original sample's TCLP extraction date which indicates TCLP extraction was also re-done.*

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Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

Lab Order: 0302167
Client: E and E San Francisco Office
Project: PG&E Topock Compressor Sta.

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Received Date	Matrix	Test Name	TCLP Date*	Prep Date	Analysis Date
0302167-11A	L1-S	2/20/2003 8:11:00 AM	2/21/2003 7:35:00 AM	Soil	Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-12A	L1-2	2/20/2003 8:20:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-13A	L3-S	2/20/2003 8:40:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-14A	L3-1	2/20/2003 8:45:00 AM			Alkalinity by Modified Method 2320B			3/17/2003
					Anions by Ion Chromatography Method 9056			3/5/2003
					Hexavalent Chromium by 7196A/3060A			2/25/2003
					Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	3/4/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-15A	L3-1.5	2/20/2003 8:50:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM

**Reflects Date of TCLP Extraction Completion. For Re-extracted samples (*RE) reflects the TCLP Extraction from the original sample unless the date differs from the original sample's TCLP extraction date which indicates TCLP extraction was also re-done.*

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Analytical Services Center
Lancaster, New York 14086
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Laboratory Results

NYS ELAP ID#: 10486

Lab Order: 0302167
Client: E and E San Francisco Office
Project: PG&E Topock Compressor Sta.

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Received Date	Matrix	Test Name	TCLP Date*	Prep Date	Analysis Date
0302167-15A	L3-1.5	2/20/2003 8:50:00 AM	2/21/2003 7:35:00 AM	Soil	Mercury Analysis in Soil by Method 7471A		2/27/2003	2/28/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-16A	AOC2A	2/20/2003 9:40:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-17A	AOC2B	2/20/2003 9:45:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-18A	AOC3A	2/20/2003 9:50:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-19A	AOC3C	2/20/2003 10:00:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003
					pH by Method EPA 9045C			2/24/2003
0302167-20A	AOC3B	2/20/2003 9:55:00 AM			Hexavalent Chromium by 7196A/3060A			2/25/2003
					Metals by ICP Method 6010B		2/24/2003	2/25/2003
					Percent Moisture			2/24/2003

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM

**Reflects Date of TCLP Extraction Completion. For Re-extracted samples (*RE) reflects the TCLP Extraction from the original sample unless the date differs from the original sample's TCLP extraction date which indicates TCLP extraction was also re-done.*

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Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

Lab Order: 0302167
Client: E and E San Francisco Office
Project: PG&E Topock Compressor Sta.

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Received Date	Matrix	Test Name	TCLP Date*	Prep Date	Analysis Date
0302167-20A	AOC3B	2/20/2003 9:55:00 AM	2/21/2003 7:35:00 AM	Soil	pH by Method EPA 9045C			2/24/2003

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM

**Reflects Date of TCLP Extraction Completion. For Re-extracted samples (*RE) reflects the TCLP Extraction from the original sample unless the date differs from the original sample's TCLP extraction date which indicates TCLP extraction was also re-done.*

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-01A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-1-1
Alt. Client ID:
Collection Date: 2/19/2003 2:30:00 PM % Moist: 1.00
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B

Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.337	2.02	mg/Kg-dry	1	2/25/2003 8:45:09 PM	OPTIMA_030225C	CMO
Arsenic	2.39		0.337	1.01	mg/Kg-dry	1			
Barium	162		0.182	1.01	mg/Kg-dry	1			
Beryllium	0.672		0.0592	0.505	mg/Kg-dry	1			
Cadmium	ND		0.0538	0.505	mg/Kg-dry	1			
Chromium	22.0		0.211	1.01	mg/Kg-dry	1			
Cobalt	7.09		0.142	1.01	mg/Kg-dry	1			
Copper	11.6		0.291	1.01	mg/Kg-dry	1			
Lead	4.75		0.172	0.505	mg/Kg-dry	1			
Molybdenum	0.529	J	0.389	1.01	mg/Kg-dry	1			
Nickel	20.4		0.352	1.01	mg/Kg-dry	1			
Selenium	0.927	J	0.563	1.01	mg/Kg-dry	1			
Silver	ND		0.2	1.01	mg/Kg-dry	1			
Thallium	ND		0.681	2.02	mg/Kg-dry	2	2/28/2003 2:33:37 PM	OPTIMA_030228B	
Vanadium	35.7		0.298	1.01	mg/Kg-dry	1	2/25/2003 8:45:09 PM	OPTIMA_030225C	
Zinc	33.1		0.434	1.01	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-02A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: BGW-1S
Alt. Client ID:
Collection Date: 2/19/2003 2:28:00 PM **% Moist:** 14.20
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	31.8		0.234	1.12	mg/Kg-dry	1	2/25/2003 9:03:55 PM	OPTIMA_030225C	CMO
Copper	23.2		0.323	1.12	mg/Kg-dry	1			
Nickel	21.6		0.39	1.12	mg/Kg-dry	1			
Zinc	66.1		0.482	1.12	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-03A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-3S
Alt. Client ID:
Collection Date: 2/19/2003 1:40:00 PM % Moist: 11.50
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	18.5		0.197	0.942	mg/Kg-dry	1	2/25/2003 9:08:38 PM	OPTIMA_030225C	CMO
Copper	11.8		0.271	0.942	mg/Kg-dry	1			
Nickel	14.8		0.328	0.942	mg/Kg-dry	1			
Zinc	47.7		0.405	0.942	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-04A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-3-1
Alt. Client ID:
Collection Date: 2/19/2003 1:45:00 PM % Moist:3.72
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B

Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.609	3.64	mg/Kg-dry	2	2/26/2003 3:59:54 PM	OPTIMA_030226A	CMO
Arsenic	1.51		0.304	0.911	mg/Kg-dry	1	2/25/2003 9:13:30 PM	OPTIMA_030225C	
Barium	97.3		0.164	0.911	mg/Kg-dry	1			
Beryllium	0.636		0.0534	0.456	mg/Kg-dry	1			
Cadmium	ND		0.0486	0.456	mg/Kg-dry	1			
Chromium	24.5		0.19	0.911	mg/Kg-dry	1			
Cobalt	7.44		0.128	0.911	mg/Kg-dry	1			
Copper	11.5		0.262	0.911	mg/Kg-dry	1			
Lead	3.43		0.155	0.456	mg/Kg-dry	1			
Molybdenum	0.542	J	0.351	0.911	mg/Kg-dry	1			
Nickel	19.9		0.317	0.911	mg/Kg-dry	1			
Selenium	ND		0.507	0.911	mg/Kg-dry	1			
Silver	ND		0.18	0.911	mg/Kg-dry	1			
Thallium	ND		0.614	1.82	mg/Kg-dry	2	2/26/2003 3:59:54 PM	OPTIMA_030226A	
Vanadium	34.2		0.269	0.911	mg/Kg-dry	1	2/25/2003 9:13:30 PM	OPTIMA_030225C	
Zinc	34.6		0.392	0.911	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Laboratory Results

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-2S
Alt. Client ID:
Collection Date: 2/19/2003 2:40:00 PM **% Moist:** 1.34
Lab ID: 0302167-05A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	23.7		0.165	0.792	mg/Kg-dry	1	2/25/2003 9:27:19 PM	OPTIMA_030225C	CMO
Copper	10.2		0.228	0.792	mg/Kg-dry	1			
Nickel	18.3		0.276	0.792	mg/Kg-dry	1			
Zinc	29.5		0.341	0.792	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Laboratory Results

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4493 Walden Avenue
Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-2-1
Alt. Client ID:
Collection Date: 2/19/2003 2:45:00 PM **% Moist:** 3.57
Lab ID: 0302167-06A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.63	3.77	mg/Kg-dry	2	2/26/2003 4:04:26 PM	OPTIMA_030226A	CMO
Arsenic	1.68		0.315	0.943	mg/Kg-dry	1	2/25/2003 9:31:55 PM	OPTIMA_030225C	
Barium	63.5		0.17	0.943	mg/Kg-dry	1			
Beryllium	0.512		0.0552	0.471	mg/Kg-dry	1			
Cadmium	ND		0.0502	0.471	mg/Kg-dry	1			
Chromium	22.3		0.197	0.943	mg/Kg-dry	1			
Cobalt	7.02		0.133	0.943	mg/Kg-dry	1			
Copper	7.73		0.272	0.943	mg/Kg-dry	1			
Lead	2.59		0.16	0.471	mg/Kg-dry	1			
Molybdenum	0.451	J	0.363	0.943	mg/Kg-dry	1			
Nickel	21.0		0.328	0.943	mg/Kg-dry	1			
Selenium	ND		0.525	0.943	mg/Kg-dry	1			
Silver	ND		0.187	0.943	mg/Kg-dry	1			
Thallium	ND		0.635	1.89	mg/Kg-dry	2	2/26/2003 4:04:26 PM	OPTIMA_030226A	
Vanadium	27.7		0.278	0.943	mg/Kg-dry	1	2/25/2003 9:31:55 PM	OPTIMA_030225C	
Zinc	40.5		0.405	0.943	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-07A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-4S
Alt. Client ID:
Collection Date: 2/19/2003 1:55:00 PM % Moist:3.57
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	21.3		0.148	0.710	mg/Kg-dry	1	2/25/2003 9:36:32 PM	OPTIMA_030225C	CMO
Copper	14.4		0.205	0.710	mg/Kg-dry	1			
Nickel	13.8		0.247	0.710	mg/Kg-dry	1			
Zinc	43.6		0.305	0.710	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-08A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: BGW-4-1
Alt. Client ID:
Collection Date: 2/19/2003 1:30:00 PM **% Moist:** 3.01
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.547	3.27	mg/Kg-dry	2	2/26/2003 4:08:58 PM	OPTIMA_030226A	CMO
Arsenic	0.884		0.273	0.818	mg/Kg-dry	1	2/25/2003 9:41:11 PM	OPTIMA_030225C	
Barium	66.9		0.147	0.818	mg/Kg-dry	1			
Beryllium	0.459		0.048	0.409	mg/Kg-dry	1			
Cadmium	ND		0.0436	0.409	mg/Kg-dry	1			
Chromium	32.4		0.171	0.818	mg/Kg-dry	1			
Cobalt	7.61		0.115	0.818	mg/Kg-dry	1			
Copper	7.50		0.236	0.818	mg/Kg-dry	1			
Lead	3.08		0.139	0.409	mg/Kg-dry	1			
Molybdenum	0.383	J	0.315	0.818	mg/Kg-dry	1			
Nickel	16.9		0.285	0.818	mg/Kg-dry	1			
Selenium	0.738	J	0.456	0.818	mg/Kg-dry	1			
Silver	ND		0.162	0.818	mg/Kg-dry	1			
Thallium	ND		0.552	1.64	mg/Kg-dry	2	2/26/2003 4:08:58 PM	OPTIMA_030226A	
Vanadium	24.6		0.241	0.818	mg/Kg-dry	1	2/25/2003 9:41:11 PM	OPTIMA_030225C	
Zinc	29.1		0.352	0.818	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Laboratory Results

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-09A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: L2-S
Alt. Client ID:
Collection Date: 2/20/2003 7:50:00 AM **% Moist:** 16.50
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.656	3.93	mg/Kg-dry	2	2/26/2003 4:13:31 PM	OPTIMA_030226A	CMO
Arsenic	7.02		0.328	0.982	mg/Kg-dry	1	2/25/2003 9:45:49 PM	OPTIMA_030225C	
Barium	337		0.177	0.982	mg/Kg-dry	1			
Beryllium	1.21		0.0575	0.491	mg/Kg-dry	1			
Cadmium	0.146	J	0.0523	0.491	mg/Kg-dry	1			
Chromium	86.8		0.205	0.982	mg/Kg-dry	1			
Cobalt	9.74		0.138	0.982	mg/Kg-dry	1			
Copper	42.7		0.283	0.982	mg/Kg-dry	1			
Lead	29.3		0.167	0.491	mg/Kg-dry	1			
Molybdenum	1.16		0.378	0.982	mg/Kg-dry	1			
Nickel	22.8		0.342	0.982	mg/Kg-dry	1			
Selenium	ND		0.547	0.982	mg/Kg-dry	1			
Silver	ND		0.194	0.982	mg/Kg-dry	1			
Thallium	ND		1.65	4.91	mg/Kg-dry	5	2/27/2003 3:06:21 PM	OPTIMA_030227C	
Vanadium	54.6		0.29	0.982	mg/Kg-dry	1	2/25/2003 9:45:49 PM	OPTIMA_030225C	
Zinc	122		0.422	0.982	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-10A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: L2-2
Alt. Client ID:
Collection Date: 2/20/2003 8:00:00 AM **% Moist:** 5.89
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.311	1.86	mg/Kg-dry	1	3/4/2003 5:20:32 PM	OPTIMA4300_030304A	TJG
Arsenic	8.79		0.311	0.932	mg/Kg-dry	1			
Barium	249		0.168	0.932	mg/Kg-dry	1	2/25/2003 9:50:28 PM	OPTIMA_030225C	CMO
Beryllium	0.780		0.0546	0.466	mg/Kg-dry	1			
Cadmium	0.437	J	0.0497	0.466	mg/Kg-dry	1			
Chromium	3360		0.195	0.932	mg/Kg-dry	1			
Cobalt	6.63		0.131	0.932	mg/Kg-dry	1			
Copper	211		0.268	0.932	mg/Kg-dry	1			
Lead	70.0		0.158	0.466	mg/Kg-dry	1			
Molybdenum	2.07		0.359	0.932	mg/Kg-dry	1			
Nickel	18.0		0.324	0.932	mg/Kg-dry	1			
Selenium	ND		1.04	1.86	mg/Kg-dry	2	2/26/2003 4:18:01 PM	OPTIMA_030226A	
Silver	ND		0.185	0.932	mg/Kg-dry	1	2/25/2003 9:50:28 PM	OPTIMA_030225C	
Thallium	ND		0.628	1.86	mg/Kg-dry	2	2/26/2003 4:18:01 PM	OPTIMA_030226A	
Vanadium	39.9		0.275	0.932	mg/Kg-dry	1	2/25/2003 9:50:28 PM	OPTIMA_030225C	
Zinc	278		0.401	0.932	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Laboratory Results

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L1-S
Alt. Client ID:
Collection Date: 2/20/2003 8:11:00 AM **% Moist:** 6.08
Lab ID: 0302167-11A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.697	4.18	mg/Kg-dry	2	2/26/2003 4:22:36 PM	OPTIMA_030226A	CMO
Arsenic	3.79		0.349	1.04	mg/Kg-dry	1	2/25/2003 9:55:09 PM	OPTIMA_030225C	
Barium	220		0.188	1.04	mg/Kg-dry	1			
Beryllium	0.798		0.0612	0.522	mg/Kg-dry	1			
Cadmium	0.0611	J	0.0556	0.522	mg/Kg-dry	1			
Chromium	88.4		0.218	1.04	mg/Kg-dry	1			
Cobalt	6.63		0.147	1.04	mg/Kg-dry	1			
Copper	34.8		0.301	1.04	mg/Kg-dry	1			
Lead	27.0		0.177	0.522	mg/Kg-dry	1			
Molybdenum	1.32		0.402	1.04	mg/Kg-dry	1			
Nickel	17.0		0.363	1.04	mg/Kg-dry	1			
Selenium	ND		0.581	1.04	mg/Kg-dry	1			
Silver	ND		0.207	1.04	mg/Kg-dry	1			
Thallium	ND		0.352	1.04	mg/Kg-dry	1			
Vanadium	37.5		0.308	1.04	mg/Kg-dry	1			
Zinc	99.7		0.449	1.04	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Laboratory Results

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-12A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: L1-2
Alt. Client ID:
Collection Date: 2/20/2003 8:20:00 AM **% Moist:** 1.85
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.334	2.00	mg/Kg-dry	1	2/25/2003 9:59:47 PM	OPTIMA_030225C	CMO
Arsenic	1.09		0.334	0.999	mg/Kg-dry	1			
Barium	131		0.18	0.999	mg/Kg-dry	1			
Beryllium	0.422	J	0.0585	0.499	mg/Kg-dry	1			
Cadmium	ND		0.0532	0.499	mg/Kg-dry	1			
Chromium	217		0.209	0.999	mg/Kg-dry	1			
Cobalt	3.80		0.141	0.999	mg/Kg-dry	1			
Copper	69.6		0.288	0.999	mg/Kg-dry	1			
Lead	14.5		0.17	0.499	mg/Kg-dry	1			
Molybdenum	5.11		0.385	0.999	mg/Kg-dry	1			
Nickel	10.8		0.348	0.999	mg/Kg-dry	1			
Selenium	ND		0.556	0.999	mg/Kg-dry	1			
Silver	ND		0.198	0.999	mg/Kg-dry	1			
Thallium	ND		0.673	2.00	mg/Kg-dry	2	2/26/2003 4:27:10 PM	OPTIMA_030226A	
Vanadium	19.7		0.295	0.999	mg/Kg-dry	1	2/25/2003 9:59:47 PM	OPTIMA_030225C	
Zinc	123		0.43	0.999	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-13A Sample Type: SAMP Matrix: Soil

Client Sample ID: L3-S
Alt. Client ID:
Collection Date: 2/20/2003 8:40:00 AM % Moist: 11.00
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B

Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.308	1.84	mg/Kg-dry	1	2/25/2003 10:04:25 PM	OPTIMA_030225C	CMO
Arsenic	7.18		0.308	0.921	mg/Kg-dry	1			
Barium	264		0.166	0.921	mg/Kg-dry	1			
Beryllium	1.10		0.054	0.460	mg/Kg-dry	1			
Cadmium	0.0822	J	0.0491	0.460	mg/Kg-dry	1			
Chromium	28.4		0.192	0.921	mg/Kg-dry	1			
Cobalt	7.88		0.13	0.921	mg/Kg-dry	1			
Copper	22.7		0.265	0.921	mg/Kg-dry	1			
Lead	23.0		0.157	0.460	mg/Kg-dry	1			
Molybdenum	0.924		0.355	0.921	mg/Kg-dry	1			
Nickel	18.1		0.321	0.921	mg/Kg-dry	1			
Selenium	ND		0.513	0.921	mg/Kg-dry	1			
Silver	ND		0.182	0.921	mg/Kg-dry	1			
Thallium	ND		0.621	1.84	mg/Kg-dry	2	2/26/2003 4:31:45 PM	OPTIMA_030226A	
Vanadium	43.9		0.272	0.921	mg/Kg-dry	1	2/25/2003 10:04:25 PM	OPTIMA_030225C	
Zinc	74.3		0.396	0.921	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-14A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: L3-1
Alt. Client ID:
Collection Date: 2/20/2003 8:45:00 AM **% Moist:** 1.94
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.619	3.71	mg/Kg-dry	2	2/26/2003 4:36:21 PM	OPTIMA_030226A	CMO
Arsenic	2.52		0.31	0.927	mg/Kg-dry	1	2/25/2003 10:18:09 PM	OPTIMA_030225C	
Barium	203		0.167	0.927	mg/Kg-dry	1			
Beryllium	0.568		0.0543	0.464	mg/Kg-dry	1			
Cadmium	0.183	J	0.0494	0.464	mg/Kg-dry	1			
Calcium	139000		11.7	92.7	mg/Kg-dry	1	3/4/2003 12:39:09 AM	OPTIMA3300_030303E	
Chromium	379		0.194	0.927	mg/Kg-dry	1	2/25/2003 10:18:09 PM	OPTIMA_030225C	
Cobalt	4.48		0.131	0.927	mg/Kg-dry	1			
Copper	79.7		0.267	0.927	mg/Kg-dry	1			
Lead	19.1		0.158	0.464	mg/Kg-dry	1			
Magnesium	12800		3.04	18.5	mg/Kg-dry	1	3/4/2003 12:39:09 AM	OPTIMA3300_030303E	
Molybdenum	ND		0.714	1.85	mg/Kg-dry	2	2/26/2003 4:36:21 PM	OPTIMA_030226A	
Nickel	10.1		0.323	0.927	mg/Kg-dry	1	2/25/2003 10:18:09 PM	OPTIMA_030225C	
Selenium	ND		1.03	1.85	mg/Kg-dry	2	2/26/2003 4:36:21 PM	OPTIMA_030226A	
Silver	ND		0.184	0.927	mg/Kg-dry	1	2/25/2003 10:18:09 PM	OPTIMA_030225C	
Sodium	1280	B	4.33	92.7	mg/Kg-dry	1	3/4/2003 5:49:42 PM	OPTIMA3300_030304A	
Thallium	0.469	J	0.312	0.927	mg/Kg-dry	1	2/25/2003 10:18:09 PM	OPTIMA_030225C	
Vanadium	37.6		0.273	0.927	mg/Kg-dry	1			
Zinc	252		0.399	0.927	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits .
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Laboratory Results

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-15A Sample Type: SAMP Matrix: Soil

Client Sample ID: L3-1.5
Alt. Client ID:
Collection Date: 2/20/2003 8:50:00 AM % Moist: 0.93
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B

Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Antimony	ND		0.337	2.02	mg/Kg-dry	1	2/25/2003 10:22:44 PM	OPTIMA_030225C	CMO
Arsenic	2.21		0.337	1.01	mg/Kg-dry	1			
Barium	109		0.182	1.01	mg/Kg-dry	1			
Beryllium	0.494	J	0.0592	0.505	mg/Kg-dry	1			
Cadmium	ND		0.0538	0.505	mg/Kg-dry	1			
Chromium	77.7		0.211	1.01	mg/Kg-dry	1			
Cobalt	5.38		0.142	1.01	mg/Kg-dry	1			
Copper	17.2		0.291	1.01	mg/Kg-dry	1			
Lead	116		0.172	0.505	mg/Kg-dry	1			
Molybdenum	0.654	J	0.389	1.01	mg/Kg-dry	1			
Nickel	11.9		0.351	1.01	mg/Kg-dry	1			
Selenium	ND		0.562	1.01	mg/Kg-dry	1			
Silver	ND		0.2	1.01	mg/Kg-dry	1			
Thallium	ND		0.34	1.01	mg/Kg-dry	1			
Vanadium	27.7		0.298	1.01	mg/Kg-dry	1			
Zinc	61.9		0.434	1.01	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-16A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC2A
Alt. Client ID:
Collection Date: 2/20/2003 9:40:00 AM % Moist: 10.30
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	26.1		0.22	1.05	mg/Kg-dry	1	2/25/2003 10:27:23 PM	OPTIMA_030225C	CMO
Copper	10.2		0.303	1.05	mg/Kg-dry	1			
Nickel	12.4		0.366	1.05	mg/Kg-dry	1			
Zinc	367		0.452	1.05	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR7 - 3/4/2003 12:01:00 AM
Printed: Friday, March 07, 2003 10:44:13 AM

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-17A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC2B
Alt. Client ID:
Collection Date: 2/20/2003 9:45:00 AM % Moist:2.86
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	17.3		0.176	0.844	mg/Kg-dry	1	2/25/2003 10:32:03 PM	OPTIMA_030225C	CMO
Copper	11.2		0.243	0.844	mg/Kg-dry	1			
Nickel	17.0		0.294	0.844	mg/Kg-dry	1			
Zinc	23.9		0.363	0.844	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR7 - 3/4/2003 12:01:00 AM Printed: Friday, March 07, 2003 10:44:13 AM

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-18A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC3A
Alt. Client ID:
Collection Date: 2/20/2003 9:50:00 AM % Moist:2.55
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	18.2		0.21	1.01	mg/Kg-dry	1	2/25/2003 10:36:43 PM	OPTIMA_030225C	CMO
Copper	6.57		0.29	1.01	mg/Kg-dry	1			
Nickel	6.89		0.35	1.01	mg/Kg-dry	1			
Zinc	27.5		0.433	1.01	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
I - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR7 - 3/4/2003 12:01:00 AM Printed: Friday, March 07, 2003 10:44:14 AM

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-19A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC3C
Alt. Client ID:
Collection Date: 2/20/2003 10:00:00 A % Moist:7.80
Test Code: 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B Method: SW6010B Prep Method: SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	16.2		0.222	1.06	mg/Kg-dry	1	2/25/2003 10:41:24 PM	OPTIMA_030225C	CMO
Copper	11.6		0.306	1.06	mg/Kg-dry	1			
Nickel	11.9		0.37	1.06	mg/Kg-dry	1			
Zinc	38.0		0.457	1.06	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR7 - 3/4/2003 12:01:00 AM Printed: Friday, March 07, 2003 10:44:15 AM

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: AOC3B
Alt. Client ID:
Collection Date: 2/20/2003 9:55:00 AM **% Moist:** 4.29
Lab ID: 0302167-20A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_6010B_S

ICP METALS ANALYSIS BY METHOD 6010B **Method:** SW6010B **Prep Method:** SW3050B

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium	14.0		0.202	0.967	mg/Kg-dry	1	2/25/2003 10:45:58 PM	OPTIMA_030225C	CMO
Copper	7.76		0.279	0.967	mg/Kg-dry	1			
Nickel	8.78		0.337	0.967	mg/Kg-dry	1			
Zinc	30.3		0.416	0.967	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
I - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR7 - 3/4/2003 12:01:00 AM
Printed: Friday, March 07, 2003 10:44:16 AM

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Method Blank

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: MB-200300636 Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: OPTIMA_030225C SeqNo: 690213 Analysis Date 2/25/2003 8:35:49 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Antimony	ND	0.3340	2.000								
A Arsenic	ND	0.3340	1.000								
A Barium	ND	0.1800	1.000								
A Beryllium	ND	0.05860	0.5000								
A Cadmium	ND	0.05330	0.5000								
A Chromium	ND	0.2090	1.000								
A Cobalt	ND	0.1410	1.000								
A Copper	ND	0.2880	1.000								
A Lead	ND	0.1700	0.5000								
A Molybdenum	ND	0.3850	1.000								
A Nickel	ND	0.3480	1.000								
A Selenium	ND	0.5570	1.000								
A Silver	ND	0.1980	1.000								
A Thallium	ND	0.3370	1.000								
A Vanadium	ND	0.2950	1.000								
A Zinc	ND	0.4300	1.000								

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Method Blank

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg

Sample ID: **MB-200300636** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: OPTIMA3300_030303E SeqNo: 694085 Analysis Date 3/4/2003 12:08:05 AM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Calcium	ND	12.60	100.0								
A Magnesium	ND	3.280	20.00								

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Method Blank

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg

Sample ID: **MB-200300636** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: OPTIMA3300_030304A SeqNo: 694940 Analysis Date 3/4/2003 5:18:46 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Sodium	9.434	4.670	100.0								J

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS** Client Sample ID: **BGW-1-1** DF: 2 DL_No: 1

Run Batch ID: OPTIMA_030228B SeqNo: 692446 Analysis Date 2/28/2003 2:38:13 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Thallium	103.5	0.6810	2.020	101.0	0	102	75	125			

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: OPTIMA3300_030303E SeqNo: 694088 Analysis Date 3/4/2003 12:24:30 AM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Calcium	33500	12.70	101.0	1010	28260	518	75	125			M
A Magnesium	10290	3.310	20.20	1010	9633	65	75	125			M

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: OPTIMA3300_030304A SeqNo: 694943 Analysis Date 3/4/2003 5:35:06 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Sodium	1239	4.720	101.0	1010	93.07	113	75	125			B

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS1** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: OPTIMA_030225C SeqNo: 690217 Analysis Date 2/25/2003 8:54:32 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Antimony	53.11	0.3370	2.020	101.0	0	53	75	125	3.2	35	M
A Arsenic	102.7	0.3370	1.010	101.0	2.389	99	75	125	3.4	35	
A Barium	248.2	0.1820	1.010	101.0	162.1	85	75	125	35.1	35	R
A Beryllium	101.8	0.05920	0.5050	101.0	0.6717	100	75	125	1.5	35	
A Cadmium	99.80	0.05380	0.5050	101.0	0	99	75	125	1.8	35	
A Chromium	119.6	0.2110	1.010	101.0	22.02	97	75	125	5.5	35	
A Cobalt	106.3	0.1420	1.010	101.0	7.094	98	75	125	2.0	35	
A Copper	115.9	0.2910	1.010	101.0	11.57	103	75	125	3.8	35	
A Lead	105.2	0.1720	0.5050	101.0	4.749	99	75	125	2.4	35	
A Molybdenum	103.9	0.3890	1.010	101.0	0.5292	102	75	125	3.0	35	
A Nickel	116.1	0.3520	1.010	101.0	20.37	95	75	125	1.4	35	
A Selenium	101.0	0.5630	1.010	101.0	0.9274	99	75	125	2.7	35	
A Silver	4.065	0.2000	1.010	5.051	0	80	75	125	0.3	35	
A Vanadium	138.0	0.2980	1.010	101.0	35.72	101	75	125	5.7	35	
A Zinc	128.8	0.4340	1.010	101.0	33.06	95	75	125	4.0	35	

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS1** Client Sample ID: **BGW-1-1** DF: 2 DL_No: 1

Run Batch ID: OPTIMA_030228B SeqNo: 692447 Analysis Date 2/28/2003 2:42:53 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Thallium	102.8	0.6810	2.020	101.0	0	102	75	125	0.7	35	

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: **OPTIMA_030225C** SeqNo: 690216 Analysis Date 2/25/2003 8:49:49 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Antimony	54.82	0.3370	2.020	101.0	0	54	75	125			M
A Arsenic	106.2	0.3370	1.010	101.0	2.389	103	75	125			
A Barium	284.8	0.1820	1.010	101.0	162.1	121	75	125			
A Beryllium	103.4	0.05920	0.5050	101.0	0.6717	102	75	125			
A Cadmium	101.6	0.05380	0.5050	101.0	0	101	75	125			
A Chromium	125.1	0.2110	1.010	101.0	22.02	102	75	125			
A Cobalt	108.3	0.1420	1.010	101.0	7.094	100	75	125			
A Copper	120.0	0.2910	1.010	101.0	11.57	107	75	125			
A Lead	107.6	0.1720	0.5050	101.0	4.749	102	75	125			
A Molybdenum	107.1	0.3890	1.010	101.0	0.5292	105	75	125			
A Nickel	117.5	0.3520	1.010	101.0	20.37	96	75	125			
A Selenium	103.7	0.5630	1.010	101.0	0.9274	102	75	125			
A Silver	4.077	0.2000	1.010	5.051	0	81	75	125			
A Vanadium	144.0	0.2980	1.010	101.0	35.72	107	75	125			
A Zinc	132.7	0.4340	1.010	101.0	33.06	99	75	125			

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS1** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: OPTIMA3300_030303E SeqNo: 694089 Analysis Date 3/4/2003 12:29:24 AM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Calcium	28010	12.70	101.0	1010	28260	-25	75	125	220.2	35	MR
A Magnesium	10120	3.310	20.20	1010	9633	48	75	125	29.9	35	M

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Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS1** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: OPTIMA3300_030304A SeqNo: 694944 Analysis Date 3/4/2003 5:40:00 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Sodium	1252	4.720	101.0	1010	93.07	115	75	125	1.1	35	B

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Laboratory Control Spike

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg-dry

Sample ID: **LCS-200300636** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: OPTIMA_030225C SeqNo: 690214 Analysis Date 2/25/2003 8:40:25 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Antimony	107.0	0.3340	2.000	100.0	0	107	80	120			
A Arsenic	104.3	0.3340	1.000	100.0	0	104	80	120			
A Barium	107.8	0.1800	1.000	100.0	0	108	80	120			
A Beryllium	104.9	0.05860	0.5000	100.0	0	105	80	120			
A Cadmium	105.8	0.05330	0.5000	100.0	0	106	80	120			
A Chromium	104.8	0.2090	1.000	100.0	0	105	80	120			
A Cobalt	106.8	0.1410	1.000	100.0	0	107	80	120			
A Copper	103.6	0.2880	1.000	100.0	0	104	80	120			
A Lead	107.4	0.1700	0.5000	100.0	0	107	80	120			
A Molybdenum	110.7	0.3850	1.000	100.0	0	111	80	120			
A Nickel	105.1	0.3480	1.000	100.0	0	105	80	120			
A Selenium	103.8	0.5570	1.000	100.0	0	104	80	120			
A Silver	4.831	0.1980	1.000	5.000	0	97	80	120			
A Thallium	106.9	0.3370	1.000	100.0	0	107	80	120			
A Vanadium	105.6	0.2950	1.000	100.0	0	106	80	120			
A Zinc	100.7	0.4300	1.000	100.0	0	101	80	120			

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Laboratory Control Spike

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg

Sample ID: **LCS-200300636** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: OPTIMA3300_030303E SeqNo: 694086 Analysis Date 3/4/2003 12:13:49 AM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Calcium	1068	12.60	100.0	1000	0	107	80	120			
A Magnesium	1069	3.280	20.00	1000	0	107	80	120			

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Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
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4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Laboratory Control Spike

Metals by ICP Method 6010B Test Code: *1_6010B_S* Units: mg/Kg

Sample ID: **LCS-200300636** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: OPTIMA3300_030304A SeqNo: 694941 Analysis Date 3/4/2003 5:24:29 PM Prep Batch ID: 200300636 Prep Date: 2/24/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Sodium	1067	4.670	100.0	1000	0	107	80	120			B

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Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Laboratory Results

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Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-01A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-1-1
Alt. Client ID:
Collection Date: 2/19/03 2:30:00 PM % Moist:1.00
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	ND		0.00406	0.0343	mg/Kg-dry	1	2/28/03 2:20:39 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Laboratory Results

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-04A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-3-1
Alt. Client ID:
Collection Date: 2/19/03 1:45:00 PM % Moist:3.72
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	ND		0.00368	0.0312	mg/Kg-dry	1	2/28/03 2:25:18 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-06A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-2-1
Alt. Client ID:
Collection Date: 2/19/03 2:45:00 PM % Moist:3.57
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	ND		0.00379	0.0321	mg/Kg-dry	1	2/28/03 2:27:31 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Client Sample ID: BGW-4-1
Lab Order: 0302167
Alt. Client ID:
Project: PG&E Topock Compressor Sta.
Collection Date: 2/19/03 1:30:00 PM
% Moist:3.01
Lab ID: 0302167-08A Sample Type: SAMP Matrix: Soil
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A
Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	ND		0.00377	0.0319	mg/Kg-dry	1	2/28/03 2:29:02 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-09A Sample Type: SAMP Matrix: Soil

Client Sample ID: L2-S
Alt. Client ID:
Collection Date: 2/20/03 7:50:00 AM % Moist: 16.50
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	0.0498		0.00425	0.0359	mg/Kg-dry	1	2/28/03 2:30:45 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-10A Sample Type: SAMP Matrix: Soil

Client Sample ID: L2-2
Alt. Client ID:
Collection Date: 2/20/03 8:00:00 AM % Moist:5.89
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	0.0934		0.00377	0.0319	mg/Kg-dry	1	2/28/03 2:32:09 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-11A Sample Type: SAMP Matrix: Soil

Client Sample ID: L1-S
Alt. Client ID:
Collection Date: 2/20/03 8:11:00 AM % Moist:6.08
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	0.0179	J	0.00378	0.0319	mg/Kg-dry	1	2/28/03 2:37:55 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-12A Sample Type: SAMP Matrix: Soil

Client Sample ID: L1-2
Alt. Client ID:
Collection Date: 2/20/03 8:20:00 AM % Moist: 1.85
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	0.0106	J	0.00384	0.0325	mg/Kg-dry	1	2/28/03 2:39:24 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

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Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-13A Sample Type: SAMP Matrix: Soil

Client Sample ID: L3-S
Alt. Client ID:
Collection Date: 2/20/03 8:40:00 AM % Moist:11:00
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	0.00955	J	0.00347	0.0294	mg/Kg-dry	1	2/28/03 2:41:18 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

Analytical Services Center
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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Client Sample ID: L3-1
Lab Order: 0302167
Alt. Client ID:
Project: PG&E Topock Compressor Sta.
Collection Date: 2/20/03 8:45:00 AM
% Moist: 1.94
Lab ID: 0302167-14A Sample Type: SAMP Matrix: Soil
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A
Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	0.0315		0.00373	0.0315	mg/Kg-dry	1	2/28/03 2:42:41 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Laboratory Results

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-15A Sample Type: SAMP Matrix: Soil

Client Sample ID: L3-1.5
Alt. Client ID:
Collection Date: 2/20/03 8:50:00 AM % Moist:0.93
Test Code: 1_7471A_HG_S

MERCURY ANALYSIS IN SOIL BY METHOD 7471A Method: SW7471A Prep Method: SW7471A

Analyte	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Mercury	ND		0.00312	0.0264	mg/Kg-dry	1	2/28/03 2:44:04 PM	LEEMAN_030228C	JLS

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Leve
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Method Blank

Mercury Analysis in Soil by Method 7471A Test Code: *1_7471A_HG_S* Units: mg/Kg-dry

Sample ID: **MB-200300705** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: **LEEMAN_030228C** SeqNo: **692280** Analysis Date **2/28/03 2:17:04 PM** Prep Batch ID: **200300705** Prep Date: **2/27/03**

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Mercury	ND	0.004020	0.03400								

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike

Mercury Analysis in Soil by Method 7471A Test Code: *1_7471A_HG_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: LEEMAN_030228C SeqNo: 692281 Analysis Date 2/28/03 2:22:02 PM Prep Batch ID: 200300705 Prep Date: 2/27/03

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Mercury	0.3439	0.004060	0.03430	0.3364	0	102	83	122			

59

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Mercury Analysis in Soil by Method 7471A Test Code: *1_7471A_HG_S* Units: mg/Kg-dry

Sample ID: **0302167-01AS1** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: **LEEMAN_030228C** SeqNo: 692282 Analysis Date **2/28/03 2:23:32 PM** Prep Batch ID: **200300705** Prep Date: 2/27/03

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Mercury	0.3385	0.004060	0.03430	0.3364	0	101	83	122	1.6	35	

60

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit
J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Laboratory Control Spike

Mercury Analysis in Soil by Method 7471A Test Code: *1_7471A_HG_S* Units: mg/Kg-dry

Sample ID: **LCS-200300705** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: **LEEMAN_030228C** SeqNo: 692279 Analysis Date 2/28/03 2:19:08 PM Prep Batch ID: 200300705 Prep Date: 2/27/03

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Mercury	0.3243	0.004020	0.03400	0.3330	0	97	83	122			

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-1-1
Alt. Client ID:
Collection Date: 2/19/2003 2:30:00 PM **% Moist:** 1.00
Lab ID: 0302167-01A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1	4.0	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Analytical Services Center
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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-02A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-1S
Alt. Client ID:
Collection Date: 2/19/2003 2:28:00 PM % Moist: 14.20
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A Method: SW7196A Prep Method: SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1.1	4.3	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-03A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: BGW-3S
Alt. Client ID:
Collection Date: 2/19/2003 1:40:00 PM **% Moist:** 11.50
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1.1	4.1	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-04A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: BGW-3-1
Alt. Client ID:
Collection Date: 2/19/2003 1:45:00 PM **% Moist:** 3.72
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1.1	4.1	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-05A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-2S
Alt. Client ID:
Collection Date: 2/19/2003 2:40:00 PM % Moist: 1.34
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A Method: SW7196A Prep Method: SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		0.96	3.7	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-06A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-2-1
Alt. Client ID:
Collection Date: 2/19/2003 2:45:00 PM % Moist: 3.57
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A Method: SW7196A Prep Method: SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1	4.0	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-4S
Alt. Client ID:
Collection Date: 2/19/2003 1:55:00 PM **% Moist:** 3.57
Lab ID: 0302167-07A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1	4.0	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-08A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: BGW-4-1
Alt. Client ID:
Collection Date: 2/19/2003 1:30:00 PM **% Moist:** 3.01
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1	3.9	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-09A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: L2-S
Alt. Client ID:
Collection Date: 2/20/2003 7:50:00 AM **% Moist:** 16.50
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1.2	4.7	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L2-2
Alt. Client ID:
Collection Date: 2/20/2003 8:00:00 AM **% Moist:** 5.89
Lab ID: 0302167-10A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	13		1	4.0	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L1-S
Alt. Client ID:
Collection Date: 2/20/2003 8:11:00 AM **% Moist:** 6.08
Lab ID: 0302167-11A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1.1	4.1	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L1-2
Alt. Client ID:
Collection Date: 2/20/2003 8:20:00 AM **% Moist:** 1.85
Lab ID: 0302167-12A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	2.5	J	1	4.0	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L3-S
Alt. Client ID:
Collection Date: 2/20/2003 8:40:00 AM **% Moist:** 11.00
Lab ID: 0302167-13A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1.2	4.5	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
I - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L3-1
Alt. Client ID:
Collection Date: 2/20/2003 8:45:00 AM **% Moist:** 1.94
Lab ID: 0302167-14A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	1.2	J	0.99	3.8	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L3-1.5
Alt. Client ID:
Collection Date: 2/20/2003 8:50:00 AM **% Moist:** 0.93
Lab ID: 0302167-15A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1	4.0	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: AOC2A
Alt. Client ID:
Collection Date: 2/20/2003 9:40:00 AM **% Moist:** 10.30
Lab ID: 0302167-16A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1.1	4.2	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: AOC2B
Alt. Client ID:
Collection Date: 2/20/2003 9:45:00 AM **% Moist:** 2.86
Lab ID: 0302167-17A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		0.99	3.8	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-18A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: AOC3A
Alt. Client ID:
Collection Date: 2/20/2003 9:50:00 AM **% Moist:** 2.55
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		0.97	3.7	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-19A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: AOC3C
Alt. Client ID:
Collection Date: 2/20/2003 10:00:00 A **% Moist:** 7.80
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A **Method:** SW7196A **Prep Method:** SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1.1	4.1	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-20A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC3B
Alt. Client ID:
Collection Date: 2/20/2003 9:55:00 AM % Moist: 4.29
Test Code: 1_7196A_CR6_S

HEXAVALENT CHROMIUM BY 7196A/3060A Method: SW7196A Prep Method: SW3060A

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chromium, Hexavalent	ND		1	4.0	mg/kg-dry	1	2/25/2003	GENESYS5_CR6_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Method Blank

Hexavalent Chromium by 7196A/3060A Test Code: *1_7196A_CR6_S* Units: mg/kg-dry

Sample ID **PB-03022514** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: **GENESYS5_CR6_030225A** SeqNo: **689644** Analysis Date **2/25/2003** Prep Batch ID: **030225140R** Prep Date **2/25/2003**

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Chromium, Hexavalent	ND	1.000	4.000								

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Duplicate

Hexavalent Chromium by 7196A/3060A Test Code: *1_7196A_CR6_S* Units: mg/kg-dry

Sample ID **0302167-01A** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: GENESYS5_CR6_030225A SeqNo: 689647 Analysis Date 2/25/2003 Prep Batch ID: 030225140R Prep Date 2/25/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Chromium, Hexavalent	ND	1.000	4.000		0				0.0	35	

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit

J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)

1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Matrix Spike

Hexavalent Chromium by 7196A/3060A Test Code: *1_7196A_CR6_S* Units: mg/kg-dry

Sample ID **0302167-01A** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: GENESYS5_CR6_030225A SeqNo: 689648 Analysis Date 2/25/2003 Prep Batch ID: 030225140R Prep Date 2/25/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Chromium, Hexavalent	25.84	0.9600	3.700	36.73	0	70	75	125			M

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Post Verification Spike

Hexavalent Chromium by 7196A/3060A Test Code: *1_7196A_CR6_S* Units: mg/kg-dry

Sample ID **0302167-01A** Client Sample ID: **BGW-1-1** DF: 1 DL_No: 1

Run Batch ID: **GENESYS5_CR6_030225A** SeqNo: **689649** Analysis Date **2/25/2003** Prep Batch ID: **030225140R** Prep Date **2/25/2003**

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Chromium, Hexavalent	42.58	1.000	4.000	39.92	0	107	85	115			

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-01A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-1-1
Alt. Client ID:
Collection Date: 2/19/2003 2:30:00 PM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	7.7		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM Printed: Wednesday, March 12, 2003 4:32:07 PM

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Laboratory Results

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-02A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-1S
Alt. Client ID:
Collection Date: 2/19/2003 2:28:00 PM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.6		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

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Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-03A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-3S
Alt. Client ID:
Collection Date: 2/19/2003 1:40:00 PM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.9		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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nalytical Services Center
193 Walden Avenue
ıncaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

lient: E and E San Francisco Office
ıb Order: 0302167
:oject: PG&E Topock Compressor Sta.
ıb ID: 0302167-04A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-3-1
Alt. Client ID:
Collection Date: 2/19/2003 1:45:00 PM % Moist:
Test Code: 1_9045C_PH_S

-I BY METHOD EPA 9045C

Method: SW9045C Prep Method:

ıalyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
	9.1		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

ıtions:

Not Detected at the Reporting Limit
ıalyte detected below Reporting limits
ıalyte detected in the associated Method Blank
ıalue exceeds Maximum Contaminant Level

* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound

M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis

Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-05A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: BGW-2S
Alt. Client ID:
Collection Date: 2/19/2003 2:40:00 PM **% Moist:**
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C **Method:** SW9045C **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	9.2		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
- Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
E - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-06A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-2-1
Alt. Client ID:
Collection Date: 2/19/2003 2:45:00 PM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	9.3		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
- Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
I - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-07A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-4S
Alt. Client ID:
Collection Date: 2/19/2003 1:55:00 PM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	9.3		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
- Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-08A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-4-1
Alt. Client ID:
Collection Date: 2/19/2003 1:30:00 PM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	9.3		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
- Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
E - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-09A Sample Type: SAMP Matrix: Soil

Client Sample ID: L2-S
Alt. Client ID:
Collection Date: 2/20/2003 7:50:00 AM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.8		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM Printed: Wednesday, March 12, 2003 4:32:26 PM

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-10A Sample Type: SAMP Matrix: Soil

Client Sample ID: L2-2
Alt. Client ID:
Collection Date: 2/20/2003 8:00:00 AM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.7		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
I - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM Printed: Wednesday, March 12, 2003 4:32:29 PM

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-11A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: L1-S
Alt. Client ID:
Collection Date: 2/20/2003 8:11:00 AM **% Moist:**
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C **Method:** SW9045C **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	7.5		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Client Sample ID: L1-2
Lab Order: 0302167
Alt. Client ID:
Project: PG&E Topock Compressor Sta.
Collection Date: 2/20/2003 8:20:00 AM **% Moist:**
Lab ID: 0302167-12A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_9045C_PH_S

PH BY METHOD EPA 9045C **Method:** SW9045C **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.7		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Client Sample ID: L3-S
Lab Order: 0302167
Alt. Client ID:
Project: PG&E Topock Compressor Sta.
Collection Date: 2/20/2003 8:40:00 AM **% Moist:**
Lab ID: 0302167-13A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_9045C_PH_S

PH BY METHOD EPA 9045C **Method:** SW9045C **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.9		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
- Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-14A Sample Type: SAMP Matrix: Soil

Client Sample ID: L3-1
Alt. Client ID:
Collection Date: 2/20/2003 8:45:00 AM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.8		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
I - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L3-1.5
Alt. Client ID:
Collection Date: 2/20/2003 8:50:00 AM **% Moist:**
Lab ID: 0302167-15A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_9045C_PH_S

PH BY METHOD EPA 9045C **Method:** SW9045C **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	9.4		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
I - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-16A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC2A
Alt. Client ID:
Collection Date: 2/20/2003 9:40:00 AM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	9.6		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
- Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM Printed: Wednesday, March 12, 2003 4:32:43 PM

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-17A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC2B
Alt. Client ID:
Collection Date: 2/20/2003 9:45:00 AM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C

Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.2		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-18A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC3A
Alt. Client ID:
Collection Date: 2/20/2003 9:50:00 AM % Moist:
Test Code: 1_9045C_PH_S

PH BY METHOD EPA 9045C Method: SW9045C Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.2		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
I - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: AOC3C
Alt. Client ID:
Collection Date: 2/20/2003 10:00:00 A **% Moist:**
Lab ID: 0302167-19A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_9045C_PH_S

PH BY METHOD EPA 9045C **Method:** SW9045C **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	8.4		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: AOC3B
Alt. Client ID:
Collection Date: 2/20/2003 9:55:00 AM **% Moist:**
Lab ID: 0302167-20A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_9045C_PH_S

PH BY METHOD EPA 9045C **Method:** SW9045C **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
pH	7.4		0.1	0.10	S.U.	1	2/24/2003	DENVER_PH_030225A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Duplicate

pH by Method EPA 9045C Test Code: *1_9045C_pH_S* Units: S.U.

Sample ID **0302167-11A** Client Sample ID: **L1-S** DF: 1 DL_No: 1

Run Batch ID: **DENVER_PH_030225A** SeqNo: **689115** Analysis Date **2/24/2003** Prep Batch ID: **030224140R** Prep Date **2/24/2003**

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A pH	8.030	0.1000	0.1000		7.460				7.4	35	

105

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Duplicate

pH by Method EPA 9045C Test Code: *1_9045C_pH_S* Units: S.U.

Sample ID **0302167-20A** Client Sample ID: **AOC3B** DF: 1 DL_No: 1

Run Batch ID: **DENVER_PH_030225A** SeqNo: **689136** Analysis Date **2/24/2003** Prep Batch ID: **030224140R** Prep Date **2/24/2003**

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A pH	7.700	0.1000	0.1000		7.390				4.1	35	

107

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-14A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: L3-1
Alt. Client ID:
Collection Date: 2/20/2003 8:45:00 AM **% Moist:** 1.94
Test Code: 1_2320BM_ALK_S

ALKALINITY, BY MODIFIED METHOD 2320B **Method:** SM2320B **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Alkalinity, Bicarbonate (As CaCO3)	540	J	180	720	mg/Kg-dry	1	3/17/2003	DENVER_ALK_030317B	LMW
Alkalinity, Carbonate (As CaCO3)	ND		180	720	mg/Kg-dry	1			
Alkalinity, Total (As CaCO3)	540	J	180	720	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

108

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT

Method Blank

Alkalinity by Modified Method 2320B Test Code: *1_2320BM_ALK_S* Units: mg/Kg

Sample ID **MB-030317143** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: **DENVER_ALK_030317B** SeqNo: **705222** Analysis Date **3/17/2003** Prep Batch ID: **030317143R** Prep Date **3/17/2003**

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Alkalinity, Bicarbonate (As CaCO3)	ND	20.00	80.00								
A Alkalinity, Carbonate (As CaCO3)	ND	20.00	80.00								
A Alkalinity, Hydroxide (As CaCO3)	ND	20.00	80.00								
A Alkalinity, Total (As CaCO3)	ND	20.00	80.00								

1109

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Duplicate

Alkalinity by Modified Method 2320B Test Code: *1_2320BM_ALK_S* Units: mg/Kg-dry

Sample ID **0302167-14A** Client Sample ID: **L3-1** DF: 1 DL_No: 1

Run Batch ID: **DENVER_ALK_030317B** SeqNo: **705225** Analysis Date **3/17/2003** Prep Batch ID: **030317143R** Prep Date **3/17/2003**

	Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A	Alkalinity, Bicarbonate (As CaCO3)	452.5	170.0	700.0		540.5				17.7	35	J
A	Alkalinity, Carbonate (As CaCO3)	ND	170.0	700.0		0				0.0	35	
A	Alkalinity, Total (As CaCO3)	452.5	170.0	700.0		540.5				17.7	35	J

110

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Laboratory Control Spike

Alkalinity by Modified Method 2320B Test Code: *1_2320BM_ALK_S* Units: mg/Kg

Sample ID LCS-030317143 Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: DENVER_ALK_030317B SeqNo: 705223 Analysis Date 3/17/2003 Prep Batch ID: 030317143R Prep Date 3/17/2003

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Alkalinity, Total (As CaCO3)	54.00	20.00	80.00	50.00	0	108	89	111			J

111

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L3-1
Alt. Client ID:
Collection Date: 2/20/2003 8:45:00 AM **% Moist:** 1.94

Lab ID: 0302167-14A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** 1_9056_S

ANION ANALYSIS BY ION CHROMATOGRAPHY METHOD 9056 **Method:** SW9056 **Prep Method:** NA

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Chloride	3.71		0.93	2.04	mg/Kg-dry	1	3/5/2003 12:58:45 AM	LC-5_ANIONS_030304B	PAN
Sulfate	7.25		0.494	2.04	mg/Kg-dry	1			

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Method Blank

Anions by Ion Chromatography Method 9056 Test Code: *1_9056_S* Units: mg/Kg-dry

Sample ID **MB-030304190** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: **LC-5_ANIONS_030304B** SeqNo: **699517** Analysis Date **3/4/2003 5:53:44 PM** Prep Batch ID: **030304190R** Prep Date

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Chloride	ND	0.9120	2.000								
A Fluoride	ND	0.2090	1.000								
A Phosphate	ND	0.4960	2.000								
A Sulfate	ND	0.4840	2.000								

Definitions: ND - Not Detected at the Reporting Limit; * - Recovery outside QC limits; M - Matrix Spike Recovery outside limits; P -Post Spike Recovery outside limits; RL -Reporting Limit; J - Analyte detected below reporting limits; B - Analyte detected in the associated Method Blank; E - Result exceeds Highest Calibration Standard; R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable); 1 - Represents RSD Limit for Quad Analysis; NC - Not Calculated for values < RL; D - Diluted due to matrix or extended target compounds

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Method Blank

Anions by Ion Chromatography Method 9056 Test Code: *1_9056_S* Units: mg/Kg-dry

Sample ID **PB 1628-48-1** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: LC-5_ANIONS_030304B SeqNo: 699522 Analysis Date 3/4/2003 8:59:16 PM Prep Batch ID: 030304190R Prep Date

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Chloride	ND	0.9120	2.000								
A Fluoride	ND	0.2090	1.000								
A Phosphate	ND	0.4960	2.000								
A Sulfate	0.6822	0.4840	2.000								J

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Laboratory Control Spike

Anions by Ion Chromatography Method 9056 Test Code: *1_9056_S* Units: mg/Kg-dry

Sample ID **LCSS 1628-48-2** Client Sample ID: DF: 1 DL_No: 1

Run Batch ID: LC-5_ANIONS_030304B SeqNo: 699521 Analysis Date 3/4/2003 9:15:28 PM Prep Batch ID: 030304190R Prep Date

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Chloride	37.79	0.9120	2.000	40.00	0	94	74	127			
A Fluoride	42.35	0.2090	1.000	40.00	0	106	79	118			
A Phosphate	38.83	0.4960	2.000	40.00	0	97	69	129			
A Sulfate	38.27	0.4840	2.000	40.00	0	96	85	117			

115

Definitions: ND - Not Detected at the Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
J - Analyte detected below reporting limits B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
1 - Represents RSD Limit for Quad Analysis NC - Not Calculated for values < RL D - Diluted due to matrix or extended target compounds

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-1-1
Alt. Client ID:
Collection Date: 2/19/2003 2:30:00 PM **% Moist:**
Lab ID: 0302167-01A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	1.00		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-02A **Sample Type:** SAMP **Matrix:** Soil

Client Sample ID: BGW-1S
Alt. Client ID:
Collection Date: 2/19/2003 2:28:00 PM **% Moist:**
Test Code: PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	14.2		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-3S
Alt. Client ID:
Collection Date: 2/19/2003 1:40:00 PM **% Moist:**
Lab ID: 0302167-03A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	11.5		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
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* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
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P-Petroleum pattern is not present

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Laboratory Results

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NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-3-1
Alt. Client ID:
Collection Date: 2/19/2003 1:45:00 PM **% Moist:**
Lab ID: 0302167-04A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	3.72		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

Ecology and Environment, Inc.

Analytical Services Center
4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-2S
Alt. Client ID:
Collection Date: 2/19/2003 2:40:00 PM **% Moist:**
Lab ID: 0302167-05A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	1.34		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-06A Sample Type: SAMP Matrix: Soil

Client Sample ID: BGW-2-1
Alt. Client ID:
Collection Date: 2/19/2003 2:45:00 PM % Moist:
Test Code: PMOIST

PERCENT MOISTURE

Method: ASTM_D2216 Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	3.57		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-4S
Alt. Client ID:
Collection Date: 2/19/2003 1:55:00 PM **% Moist:**
Lab ID: 0302167-07A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	3.57		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: BGW-4-1
Alt. Client ID:
Collection Date: 2/19/2003 1:30:00 PM **% Moist:**
Lab ID: 0302167-08A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	3.01		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L2-S
Alt. Client ID:
Collection Date: 2/20/2003 7:50:00 AM **% Moist:**
Lab ID: 0302167-09A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	16.5		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone:. (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-10A Sample Type: SAMP Matrix: Soil

Client Sample ID: L2-2
Alt. Client ID:
Collection Date: 2/20/2003 8:00:00 AM % Moist:
Test Code: PMOIST

PERCENT MOISTURE

Method: ASTM_D2216 Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	5.89		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L1-S
Alt. Client ID:
Collection Date: 2/20/2003 8:11:00 AM **% Moist:**
Lab ID: 0302167-11A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	6.08		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-12A Sample Type: SAMP Matrix: Soil

Client Sample ID: L1-2
Alt. Client ID:
Collection Date: 2/20/2003 8:20:00 AM % Moist:
Test Code: PMOIST

PERCENT MOISTURE

Method: ASTM_D2216 Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	1.85		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L3-S
Alt. Client ID:
Collection Date: 2/20/2003 8:40:00 AM **% Moist:**
Lab ID: 0302167-13A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	11.0		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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4493 Walden Avenue
Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-14A Sample Type: SAMP Matrix: Soil

Client Sample ID: L3-1
Alt. Client ID:
Collection Date: 2/20/2003 8:45:00 AM % Moist:
Test Code: PMOIST

PERCENT MOISTURE

Method: ASTM_D2216 Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	1.94		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: L3-1.5
Alt. Client ID:
Collection Date: 2/20/2003 8:50:00 AM **% Moist:**
Lab ID: 0302167-15A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	0.933		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-16A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC2A
Alt. Client ID:
Collection Date: 2/20/2003 9:40:00 AM % Moist:
Test Code: PMOIST

PERCENT MOISTURE

Method: ASTM_D2216 Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	10.3		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

LIMS Version #: 3.1.4.9 SR9 - 3/10/2003 1:00:00 PM
Printed: Wednesday, March 12, 2003 4:32:43 PM

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Client Sample ID: AOC2B
Lab Order: 0302167
Alt. Client ID:
Project: PG&E Topock Compressor Sta.
Collection Date: 2/20/2003 9:45:00 AM **% Moist:**
Lab ID: 0302167-17A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	2.86		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Lancaster, New York 14086

Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: AOC3A
Alt. Client ID:
Collection Date: 2/20/2003 9:50:00 AM **% Moist:**
Lab ID: 0302167-18A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	2.55		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

Client: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Client Sample ID: AOC3C
Alt. Client ID:
Collection Date: 2/20/2003 10:00:00 A **% Moist:**

Lab ID: 0302167-19A **Sample Type:** SAMP **Matrix:** Soil **Test Code:** PMOIST

PERCENT MOISTURE **Method:** ASTM_D2216 **Prep Method:**

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	7.80		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

lient: E and E San Francisco Office
Lab Order: 0302167
Project: PG&E Topock Compressor Sta.
Lab ID: 0302167-20A Sample Type: SAMP Matrix: Soil

Client Sample ID: AOC3B
Alt. Client ID:
Collection Date: 2/20/2003 9:55:00 AM % Moist:
Test Code: PMOIST

PERCENT MOISTURE Method: ASTM_D2216 Prep Method:

Analyt	Result	Q	MDL	Limit	Units	DF	Date Analyzed	Run Batch ID	Analyst
Percent Moisture	4.29		0.1	0.100	wt%	1	2/24/2003	OHAUS_PMOIST_030224A	LMW

Definitions:

ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting limits
B - Analyte detected in the associated Method Blank
H - Value exceeds Maximum Contaminant Level
* - Recovery outside limits
R - RPD outside recovery limits
E - Value above quantitation range
Surr - Denotes Surrogate Compound
M -Matrix Spike recovery outside limits
A -Result by Method of Std. Addition
D - Diluted due to matrix or extended target compounds
N - Single Column Analysis
Q - Qualifier
X - See Case Narrative
P-Petroleum pattern is not present

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Laboratory Results

NYS ELAP ID#: 10486
Phone: (716) 685-8080

CLIENT: E and E San Francisco Office
Work Order: 0302167
Project: PG&E Topock Compressor Sta.

QC SUMMARY REPORT
Sample Duplicate

Percent Moisture Test Code: *PMOIST* Units: wt%

Sample ID **0302167-18A** Client Sample ID: **AOC3A** DF: 1 DL_No: 1

Run Batch ID: **OHAUS_PMOIST_030224A** SeqNo: **689287** Analysis Date **2/24/2003** Prep Batch ID: **030224141R** Prep Date **2/24/2003**

Analyte Type / Name	Result	MDL	RL	Spike Value	Orig Result	%REC	LowLimit	HighLimit	RPD	RPD Limit [1]	Qual
A Percent Moisture	2.288	0.1000	0.1000		2.553				10.9	35	

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Ecology -

[1] Reporting Limit * - Recovery outside QC limits M - Matrix Spike Recovery outside limits P -Post Spike Recovery outside limits RL -Reporting Limit
B - Analyte detected in the associated Method Blank E - Result exceeds Highest Calibration Standard R - RPD outside recovery limits (for Samp/Duplicates < 5X RL Difference <2X RL is Acceptable)
Calculated for values < RL D - Diluted due to matrix or extended target compounds

Wednesday, March 12, 2003 4:34:27 PM

2003 1:00:00 PM

CLOSURE ACTIVITY REPORT
OIL WATER SEPARATOR SYSTEM

TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Prepared for:

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

Prepared by:

MITTELHAUSER CORPORATION
LAGUNA HILLS, CALIFORNIA

JULY 1990

1.0 INTRODUCTION

This report discusses closure of the oil water separator (above grade tanks) system (OWSS) at the Pacific Gas and Electric (PG&E) Topock Compressor Station. Influent to the OWSS was not a hazardous waste and not in below grade tanks, therefore closure of the system was not subject to RCRA or California Title 22 closure requirements. Nonetheless, the OWSS and contaminated soil were removed to minimize adverse impacts to human health and the environment. The system was removed in November 1989 and March 1990 during Phase 2 of closure of the Hazardous Waste Management Facilities at the compressor station.

The OWSS consisted of a 3,000-gallon above-ground Holding Tank, an Oil Water Separator, and a waste oil storage pad. A Oily water from cooling jacket water drains, lube oil cooling water drains, and floor drains in the compressor station were treated by the OWSS. The oily water flowed through a 3-inch diameter underground pipeline before entering the above-ground Holding Tank. Water in the tank was discharged into the Oil Water Separator. Oil was skimmed off the top of the separator while water drained through a 3-inch diameter underground pipeline which discharged to the Chromate Reduction Tank. The oil was stored in a small tank trailer on the waste oil storage pad.

2.0 FIELD CLOSURE PROCEDURES

2.1 REMOVAL OF ABOVE-GROUND UNITS

B Solids and liquids were transferred from the Holding Tank and Oil Water Separator and into a portable tank using a vacuum truck. The interiors of these devices and the surface of the storage pad were hydroblasted to remove scale and residue. The interior walls of the Oil Water Separator were severely stained with oil requiring a hot detergent and water hydroblast to get them clean. All wastewater generated from cleaning these units was also transferred to the portable tank. After hydroblasting, the Holding Tank, Oil Water Separator and the storage pad were visually inspected to identify extensive staining, cracks, and signs of deterioration. Cracks were observed on the outside of all four corners of the Oil Water Separator. The cracks appeared to be filled with oil, indicating that leaks may have occurred from the unit.

The inspection also revealed a small gap between the Oil Water Separator and the storage pad. It appeared that spills from the transfer of oil from the Oil Water Separator to the tank trailer and leaks from the cracks in the Oil Water Separator flowed though this gap and onto the underlying soil.

After hydroblasting, the steel Holding Tank was cut into pieces several feet across that could be conveniently handled. Oily sludge deposits inside the tank could not be adequately removed by hydroblasting. At Mittelhauser's recommendation, the PG&E project manager agreed with placing pieces of the Holding Tank in the roll-off bins in which hazardous waste from the hazardous waste management facilities was collected. The bins were hauled to Chemical Waste Management's hazardous waste disposal site at Kettleman Hills.

Similarly, concrete from the upper two feet of the Oil Water Separator could not be adequately hydroblasted so it was placed in the roll-off bins and disposed of at Chemical Waste Management's hazardous waste disposal facility. The remainder of the concrete from the Oil Water Separator and from the storage pad was broken up and placed in separate piles. Representative concrete samples were collected from these piles and analyzed to determine if the structures were hazardous waste. The analytical results are presented in Section 4.0. The concrete support saddles and footings for the Holding Tank did not come into contact with oil so they were not contaminated. They were used as fill material on site at the Topock Compressor Station.

Soils beneath the former location of the Oil Water Separator and the storage pad were stained with oil over two-thirds of the area. Approximately 14 cubic yards of visibly contaminated soil were removed prior to collecting soil samples 1042-55-10, 1042-55-11 and 1042-55-12 from this area. The samples were analyzed for petroleum hydrocarbons.

2.2 TESTING AND REMOVAL OF UNDERGROUND PIPING

Underground piping associated with the OWSS was pressure tested. Pipe section I-1 carried influent to the Holding Tank from a valve box located east of the new oil water separator system. Section I-2 carried effluent from the old oil water separator to the Chromate Reduction Tank.

Pipe test results for Section I-1 indicated that the pipe may have leaked. Pressure drops of 2 and 3 pounds per square inch were observed during test runs. Inspection of the pipe revealed that the above-ground portion of the pipe adjacent to the Oil Water Separator leaked at a joint. Visibly contaminated soil around the pipe was removed from this area. Soil sample number 1042-55-4 was collected from this area.

A leak was also observed at a joint in Section I-1 approximately 20 feet downstream of the valve box. Visually

contaminated soil was removed from directly beneath the joint down to a depth of 8 inches. Soil sample number 1042-55-6 was then collected and analyzed for petroleum hydrocarbons.

After the visual inspection of the I-1 pipe was completed, the accessible areas of the pipeline were removed and disposed of as hazardous waste. A ten foot length of the pipe beneath the new oil water separator could not be removed so it was capped at both ends and left in place. A short section of the I-1 pipe entering the valve box was left in place and capped on both ends to protect the integrity of the box.

The pipe test results of the I-2 pipe indicated that the pipe did not leak. The entire length of the pipe was removed and disposed of as hazardous waste.

3.0 SAMPLE LOCATIONS AND METHODOLOGIES

After the concrete of the storage pad and the Oil Water Separator were broken up, samples were collected for analysis of total petroleum hydrocarbons. The samples were pieces of broken concrete that included the surface that had been in contact with oil. The samples for the storage pad and the Oil Water Separator were assigned numbers 1042-55-2 and 1042-55-5, respectively.

After visibly contaminated soil was removed, soil samples 1042-55-4 and 1042-55-6 were collected from the pipeline sections that appeared to be leaking. Sample numbers 1042-55-10, 1042-55-11 and 1042-55-12 were collected from beneath the Oil Water Separator in locations that had had visible oil contamination.

Each of the five soil samples and two concrete samples was analyzed for total petroleum hydrocarbons as diesel (TPH-diesel). Soil samples were collected in a Ziplock bag using a trowel which was decontaminated with an Alconox solution and rinsed with deionized water prior to use. Concrete samples were collected by hand while wearing gloves and were placed in Ziplock bags.

4.0 ANALYTICAL DATA

Analytical results from soil and concrete samples are presented in Table 1. All the samples were analyzed for total petroleum hydrocarbons as diesel and some were also analyzed for hydrocarbons lighter (lower boiling ranges) or heavier (higher boiling ranges) than diesel. The laboratory reports are presented in Appendix A.

TABLE 1

ANALYTICAL RESULTS FROM
SOIL AND CONCRETE SAMPLES FROM THE
OIL WATER SEPARATOR SYSTEM (OWSS)

Sample Number	Media	Location	TPH
1042-55-2	Concrete	Storage Pad	- ND* lighter than diesel - ND as diesel - 4,300 ppm heavier than diesel
1042-55-4	Soil	Beneath I-1 Pipe adjacent to Oil Water Separator	- ND lighter than diesel - ND as diesel - 1,200 ppm heavier than diesel
1042-55-5	Concrete	Oil Water Separator	- ND lighter than diesel - ND as diesel
1042-55-6	Soil	Beneath I-1 Pipe near Valve Box	- ND lighter than diesel - ND as diesel - 850 ppm heavier than diesel
1042-55-10	Soil	Beneath OWSS	- ND as diesel
1042-55-11	Soil	Beneath OWSS	- ND as diesel
1042-55-12	Soil	Beneath OWSS	- 32,000 ppm as diesel
1042-43-32	Soil	Beneath Sample 1042-55-12	- 18 ppm as diesel

*ND = Not Detected, detection limit = 1 mg/kg

5.0 CONCLUSIONS

As discussed in the Work Plan for removal of the Oil Water Separator System (May 1989), the cleanup criteria for soil contaminated by the OWSS is 10,000 ppm. This value was derived from Table 2-1 of the California Department of Health Services (DHS) LUFT Field Manual. Although the LUFT Manual is applicable to leaking underground fuel tanks (and the OWSS is not an underground fuel tank), the manual was used as a basis for determining a cleanup criterion that would likely be acceptable to the regulatory agencies.

Because high concentrations of petroleum hydrocarbons (32,000 ppm) were detected in sample number 1042-55-12, additional soil was removed. Other samples from the vicinity of this sample did not contain detectible concentration of petroleum hydrocarbons, so the soil contamination is limited to a small area. Sample 1042-55-12 was collected from beneath the former location of the OWSS storage pad. The contamination may be attributable to spills which occurred during transfer of oil from the OWSS to a tank trailer or to leaks which occurred through cracks in the Oil Water Separator.

In March 1990 approximately 5 cubic yards of soil was removed from the area of sample 1042-55-12. The soil was placed in a roll-off bin with other contaminated soil from the hazardous waste facility closure. The contents of the bin were disposed of at Chemical Waste Management's Kettleman Hills hazardous waste disposal facility. After removal of this soil, soil sample 1042-43-32 was collected. The total petroleum hydrocarbons concentration of this sample was 18 mg/kg. Consequently, it has been shown that all contaminated soil has been removed.

6.0 DEVIATIONS FROM THE WORK PLAN

The Work Plan states that wastewater collected from the Holding Tank and Oil Water Separator will be pumped into the new oil water separator system. Instead, the wastewater was pumped to a portable tank and analyzed to determine the appropriate disposal procedure.

The Work Plan also states that underground pipes will not be pressure tested but will be exposed and visually inspected to determine if there was a leak. Because pressure testing equipment was readily available due to the concurrent closure of the Hazardous Waste Management Facilities, the pipes were pressure tested. When test results indicated that the pipe may have leaked, the accessible areas of the pipe were exposed and visually inspected to identify leaks.

Finally, the Work Plan states that two soil samples were to be collected from beneath the OWSS and three additional samples were to be taken downgradient of the OWSS where oil stained surface soils were removed. Because the downgradient surface soil stains did not appear to be directly associated with operation of the OWSS, downgradient sampling was not conducted. Instead, three soil samples were collected beneath the OWSS where obvious soil contamination was visible and two additional soil samples were collected where pipes appeared to have leaked.

APPENDIX A

LABORATORY REPORTS

Received: 11/18/89

Results by Sample

SAMPLE ID 1042-55-2 OWSS-PAD FRACTION 07A TEST CODE 8015MS NAME Fuels-Total Hydrocarbons

Date & Time Collected 11/16/89 Category

MODIFIED 8015 - FUEL HYDROCARBONS

COMPOUND	RESULT	DET LIMIT
C5 - C12 Gasoline Range	ND	8
C10 - C16 Jet Fuel Range	ND	3
C9 - C22 Diesel Range	ND	5
Heavier than diesel	4300	8

ANALYST JC

DATE INJECTED 11/28/89

DILUTION FACTOR 1.00

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

Received: 11/18/89

Results by Sample

SAMPLE ID 1042-55-4 PI-1 FRACTION 08A TEST CODE 8015MS NAME Fuels-Total Hydrocarbons
Date & Time Collected 11/17/89 Category

MODIFIED 8015 - FUEL HYDROCARBONS

COMPOUND	RESULT	DET LIMIT
C5 - C12 Gasoline Range	ND	8
C10 - C16 Jet Fuel Range	ND	3
C9 - C22 Diesel Range	ND	5
Heavier than diesel	1200	8

ANALYST JC
DATE INJECTED 11/28/89
DILUTION FACTOR 1.00

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

Received: 11/18/89

Results by Sample

SAMPLE ID 1042-55-5 OWSS FRACTION 09A TEST CODE 8015MS NAME Fuels-Total Hydrocarbons

Date & Time Collected 11/17/89 Category

MODIFIED 8015 - FUEL HYDROCARBONS

COMPOUND	RESULT	DET LIMIT
C5 - C12 Gasoline Range	ND	8
C10 - C16 Jet Fuel Range	ND	3
C9 - C22 Diesel Range	ND	5

ANALYST JC

DATE INJECTED 11/28/89

DILUTION FACTOR 1.00

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

Received: 11/18/89

Results by Sample

SAMPLE ID 1042-55-6 PI-1 FRACTION 10A TEST CODE 8015MS NAME Fuels-Total Hydrocarbons

Date & Time Collected 11/17/89 Category

MODIFIED 8015 - FUEL HYDROCARBONS

COMPOUND	RESULT	DET LIMIT
C5 - C12 Gasoline Range	ND	8
C10 - C16 Jet Fuel Range	ND	3
C9 - C22 Diesel Range	ND	5
Heavier than diesel	850	8

ANALYST JC

DATE INJECTED 11/28/89

DILUTION FACTOR 1.00

NOTE: All results reported in mg/Kg unless otherwise specified

ND = Not detected at the specified limits

WATER ANALYSES FROM THE LABORATORIES OF W. H. & L. D. BETZ

GILLINGHAM AND WORTH STREETS PHILADELPHIA 24, PA.

FOR: Pacific Gas and Electric Co.
Needles, Calif.

Topock Compressor Station

Sample Dated: 1-21-52

SAMPLE MARKED	Well No.1	Well No.2	Softener Effluent	G.M.W. Jacket Closed Sys.	Aux. Lub. Oil Closed System	Tower Re-circulating Water	Aux. Jacket Closed System
ANALYSIS NUMBER	B 1582	1583	1584	1585	1586	1587	1588
Turbidity as SiO_2, ppm	Trace	Trace	Trace	Present	Present	Present	Present
Oil, ppm							
Ammonia as N, ppm							
Carbon Dioxide as CO_2, ppm							
Total Hardness as $CaCO_3$, ppm	356	414	14	88	162	1450	92
Calcium as $CaCO_3$, ppm							
Magnesium as $CaCO_3$, ppm							
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	98	12	0	0	12
Methyl Orange Alkalinity as $CaCO_3$, ppm	78	90	126	280	504	380	220
Sulfate as SO_4, ppm	320	208	256			2560	
Chloride as Cl, ppm	656	648	784	868	704	11200	756
Silica as SiO_2, ppm	24.6	21.4					
Phosphate as PO_4, ppm							
Sulfite as SO_3, ppm							
pH	7.0	7.1	10.9	9.5	7.5	8.1	9.3
Specific Conductance, micromhos						28000	
Specific Conductance, micromhos (corrected)							
Blowdown, %							
2P-M, ppm			70				
M-H, ppm			112				
Orocol N120-T, ppm				885	1605		661
Orocol N123-T, ppm						4.0	
Cyclon						14.3	

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WATER ANALYSES FROM THE LABORATORIES OF W. H. & L. D. BETZ

GILLINGHAM AND WORTH STREETS PHILADELPHIA 24, PA.

FOR: Pacific Gas & Electric Co.
Needles, California

Sample Dated:

WATER ANALYSES FROM THE LABORATORIES OF W. H. & L. D. BETZ

GILLINGHAM AND WORTH STREETS PHILADELPHIA 24, PA.

FOR: Pacific Gas and Electric Company
Topock Compressor Station
P. O. Box 02
Needles, California

Sample Dated: 1-21-52

SAMPLE MARKED	Old Lube Oil System						
ANALYSIS NUMBER	E-5517						
Turbidity as SiO_2, ppm	Present						
Oil, ppm							
Ammonia as N, ppm							
Carbon Dioxide as CO_2, ppm							
Total Hardness as $CaCO_3$, ppm	160						
Calcium as $CaCO_3$, ppm							
Magnesium as $CaCO_3$, ppm							
Phenolphthalein Alkalinity as $CaCO_3$, ppm	8						
Methyl Orange Alkalinity as $CaCO_3$, ppm	154						
Sulfate as SO_4, ppm	48						
Chloride as Cl, ppm	1112						
Silica as SiO_2, ppm							
Phosphate as PO_4, ppm							
Sulfite as SO_3, ppm							
pH	8.9						
Specific Conductance, micromhos	3400						
Specific Conductance, micromhos (corrected)							
Blowdown, %							

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WATER ANALYSES FROM THE LABORATORIES OF W. H. & L. D. BETZ

GILLINGHAM AND WORTH STREETS PHILADELPHIA 24, PA.

FOR: Pacific Gas & Electric Co.
Needles, California

Sample Dated:

SAMPLE MARKED	Raw						
ANALYSIS NUMBER	K-2025						
Turbidity as SiO_2, ppm	2.8						
Oil, ppm							
Ammonia as N, ppm							
Carbon Dioxide as CO_2, ppm							
Total Hardness as $CaCO_3$, ppm	364						
Calcium as $CaCO_3$, ppm	310						
Magnesium as $CaCO_3$, ppm	54						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0						
Methyl Orange Alkalinity as $CaCO_3$, ppm	76						
Sulfate as SO_4, ppm	152						
Chloride as Cl, ppm	740						
Silica as SiO_2, ppm	21.6						
Phosphate as PO_4, ppm							
Sulfite as SO_3, ppm							
pH	7.2						
Specific Conductance, micromhos							
Specific Conductance, micromhos (corrected)							
Blowdown, %							

Form 148T

Price

WATER ANALYSES FROM THE LABORATORIES OF W. H. & L. D. BETZ

GILLINGHAM AND WORTH STREETS PHILADELPHIA 24, PA.

FOR: Pacific Gas and Electric Company
Topock Compressor Station
Needles, California

Sample Dated: March 19, 1952

SAMPLE MARKED	Raw Well 1	Raw Well 2	Softener Effluent	Tower Make-up	Tower	Main Jacket	Main Lube Oil
ANALYSIS NUMBER	D-1586	1587	1588	1589	1590	1591	1592
Turbidity as SiO_2, ppm	Trace	Trace	Trace	Trace	Present	Present	Present
Oil, ppm							
Ammonia as N, ppm							
Carbon Dioxide as Co_2, ppm							
Total Hardness as $CaCo_3$, ppm	364	500	130	120	2800	120	204
Calcium as $CaCo_3$, ppm			80				
Magnesium as $CaCo_3$, ppm			50				
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	12	18	0	16	0
Methyl Orange Alkalinity as $CaCO_3$, ppm	74	68	54	40	78	250	492
Sulfate as SO_4, ppm	256	240	240	288	4400		
Chloride as Cl, ppm	1020	900	840	800	14100	1320	1030
Silica as SiO_2, ppm	22.6	20.5		15.2			
Phosphate as PO_4, ppm							
Sulfite as SO_3, ppm							
pH	7.7	7.5	9.1	9.5	6.7	9.5	7.1
Specific Conductance, micromhos					36000		
Specific Conductance, micromhos (corrected)							
Blowdown, %							
Cycles					17.6		
Orocol N123T, ml.					9.1		
Orocol N123T, ppm					114		
Orocol N120T, ml.						12.2	27.1
Orocol N120T, ppm						721	1602

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WATER ANALYSES FROM THE LABORATORIES OF W. H. & L. D. BETZ

GILLINGHAM AND WORTH STREETS PHILADELPHIA 24, PA.

FOR: Pacific Gas and Electric Company
Topock Compressor Station
Needles, California

Sample Dated: March 19, 1952

SAMPLE MARKED	Jacket	Lube Oil					
ANALYSIS NUMBER	D-1593	1574					
Turbidity as SiO_2, ppm	Present	Present					
Oil, ppm							
Ammonia as N, ppm							
Carbon Dioxide as CO_2, ppm							
Total Hardness as $CaCO_3$, ppm	156	180					
Calcium as $CaCO_3$, ppm							
Magnesium as $CaCO_3$, ppm							
Phenolphthalein Alkalinity as $CaCO_3$, ppm	5	0.					
Methyl Orange Alkalinity as $CaCO_3$, ppm	612	612					
Sulfate as SO_4, ppm							
Chloride as Cl, ppm	840	724					
Silica as SiO_2, ppm							
Phosphate as PO_4, ppm							
Sulfite as SO_3, ppm							
pH	7.3	7.1					
Specific Conductance, micromhos							
Specific Conductance, micromhos (corrected)							
Blowdown, %							
Cresol NH2OT, ml.	16.1	33.4					
Cresol NH2OT, ppm	452	1974					

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_YSIS FROM THE LABORATORIES OF W. H. & L. D. BETZ

.HAM AND WORTH STREETS PHILADELPHIA 24, PA.

acific Gas and Electric Company
Topock Compressor Station
Needles, California

Analysis Number SC31

Date: April 28, 1952

Sample Marked: Deposit From Aluminum Inspection Plate of Main Lube Oil System

Date Sample Obtained: March 19, 1952

Aluminum Oxide	85%
Organic Matter	9%
Calcium and Magnesium Silicate	3%
Chromate	2%
Sodium Chromate	1%

Yellow green deposit.

HLR VS

Form 1217

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PG10126014

W. H. & L. D. BETZ
Chemical Engineers
CONSULTANTS ON ALL WATER PROBLEMS
REGISTERED PROFESSIONAL CHEMICAL ENGINEERS
GENERAL OFFICES AND LABORATORIES
GILLINGHAM AND WORTH STREETS
PHILADELPHIA 24, PENNSYLVANIA

November 27, 1953

Pacific Gas & Electric Company
P. O. Box 3246 Annex
Bakersfield, California

Attention: Mr. R. Hesselhund, Engineer

Re: Cooling System
Topock Compressor Station
Needles, California

Gentlemen:

Our Analysis I-1341 showed a higher hardness content for the water from well No. 2 on August 24, 1953 than determined by previous analyses for that cooling makeup source. In view of concern expressed by your personnel our district engineer arranged for sampling of both wells 1 and 2 on four (4) days over a two (2) week period. Attached Certificate R-2278 to R-2285 reveal mineral characteristics determined for that special group of samples.

In addition to tests considered standard for raw water, we have conducted the diphenyl carbazide procedure, Photometric Method. That determination is quite specific for chromate, although molybdenum, vanadium, mercury and iron may influence the test. These analyses indicate that possibly cooling water containing chromate treatment contaminates both well supplies, but it cannot be judged whether the likelihood of contamination results from leakage or excessive pumping of the wells.

To simplify interpretation, certain concentrations ascertain for several of the raw water samples analyzed in the last two years are recapitulated by the attached table. The trend for increased hardness in the late summer and fall seasons might be significant. That is, possibly during the hot, dry period of the year the radius of the circle of influence for each well changes. Such a change could account for higher mineral characteristics, depending upon the depth of the well, the rate of flow through the stratum, the nature of soil and the porosity of the water bearing formation. These factors and the position of the cooling water blowdown discharge in relationship to locations of the wells would affect the opportunity for cooling water to contaminate the ground supplies.

Our district engineer will arrange with the plant for sampling of water from each well monthly for the next six months. Analyses of these samples

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W. H. & L. D. BETZ

will show whether the mineral characteristics, including chromate, decrease with cooler, wetter weather. If chromate disappears completely in time, contamination due to cooling tower blowdown as a result of greater time of well influence in dry seasons should be suspected.

U. S. Public Health Drinking Water Standards do not specify a maximum permissible limit for chromate in a water supply. Although the amount of chromate indicated by the attached analyses for the wells might not be dangerous, it would be wiser not to employ either source for drinking purposes.

Another report covering this matter may be expected when analyses of the monthly samples to be secured from each well have been completed. However, please do not hesitate to advise promptly if questions arise in the meantime.

Very truly yours

W. H. & L. D. Betz

Robert L. Reed

Robert L. Reed
Chemical Engineer

RLR:MD
Enc.
cc: Mr. Robert Brooks, Gas Dept.
cc: Mr. F. E. Clendening, Efficiency Engr.
cc: Mr. F. E. Foyle, Gen. Supt.
Gas Supply & Control
cc: Mr. W. V. Adler, Plant Foreman
cc: #3 ✓

WATER ANALYSES FROM THE LABORATORIES OF W.H. & L. D. BETZ

GILLINGHAM AND WORTH STREETS PHILADELPHIA 24, PA.

FOR: Pacific Gas & Electric Company
P. O. Box [illegible]
Bakersfield, California
Re: Cooling System
Topock Compressor Station
Needles, California

Sample Dated: 10-12 to 10-22 (1953)

SAMPLE MARKED	10-12 Wells 1	10-12 Wells 2	10-16 Wells 1	10-16 Wells 2	10-20 Wells 1	10-20 Wells 2	10-22 Wells 1
ANALYSIS NUMBER	[illegible]-2272	2279	2280	2281	2282	2283	2284
Turbidity as SiO_2, ppm	Present	Trace	Present	Present	Trace	Trace	Trace
Oil, ppm							
Ammonia as N, ppm							
Carbon Dioxide as Co_2, ppm							
Total Hardness as $CaCo_3$, ppm	850	830	810	[illegible]	[illegible]	[illegible]	[illegible]
Calcium as $CaCo_3$, ppm	610	620	590	640	550	550	530
Magnesium as $CaCo_3$, ppm	240	210	260	180	210	280	210
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0	0	0	0	0
Methyl Orange Alkalinity as $CaCO_3$, ppm	102	96	80	90	90	[illegible]	100
Sulfate as SO_4, ppm	304	202	336	208	256	198	[illegible]
Chloride as Cl, ppm	1310	1290	1320	1340	1440	1280	1320
Silica as SiO_2, ppm	22.2	23.1	22.5	20.4	21.3	22.8	21.6
Phosphate as PO_4, ppm	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Sulfite as SO_3, ppm							
pH	7.1	7.3	7.1	7.1	7.1	7.1	7.1
Specific Conductance, micromhos							
Specific Conductance, micromhos (corrected)							
Blowdown, %							
Total Iron as Fe, ppm	0.01	0.04	0.02	0.02	0.02	0.02	[illegible]
Chromate as CrO_4, ppm	[illegible]	1.65	1.46	1.09	1.67	1.64	[illegible]

Form 548T

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WATER ANALYSES FROM THE LABORATORIES OF W. H. & L. D. BETZ

GILLINGHAM AND WORTH STREETS PHILADELPHIA 24, PA.

FOR: [illegible] Gas & Electric Company
P. O. Box 3[illegible]
Bakersfield, California
Re: Cooling System
Topock Compressor Station
Needles, California

Sample Dated: [illegible]

SAMPLE MARKED	[illegible] Well 2						
ANALYSIS NUMBER	[illegible]						
Turbidity as SiO_2, ppm	Trace						
Oil, ppm							
Ammonia as N, ppm							
Carbon Dioxide as Co_2, ppm							
Total Hardness as $CaCo_3$, ppm	[illegible]						
Calcium as $CaCo_3$, ppm	[illegible]						
Magnesium as $CaCo_3$, ppm	[illegible]						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0						
Methyl Orange Alkalinity as $CaCO_3$, ppm	[illegible]						
Sulfate as SO_4, ppm	[illegible]						
Chloride as Cl, ppm	[illegible]						
Silica as SiO_2, ppm	21.7						
Phosphate as PO_4, ppm	0.[illegible]						
Sulfite as SO_3, ppm							
pH	7.5						
Specific Conductance, micromhos							
Specific Conductance, micromhos (corrected)							
Blowdown, %	0.02						
[illegible] as CrO_4, ppm	0.79						

Well Number 1

Date	Hardness	Alkalinity	Sulfate	Chloride
12/13/51	352	76	152	740
1/21/52	356	78	320	646
3/19/52	364	74	256	1020
5/7/52	362	24	272	862
6/17/52	370	110	208	950
8/18/52	420	102	224	970
10/20/52	530	84	256	1650
2/23/53	420	86	234	1174
10/12/53	650	102	304	1310
10/16/53	610	88	336	1320
10/20/53	660	90	256	1440
10/22/53	740	100	196	1360

Well Number 2

Date	Hardness	Alkalinity	Sulfate	Chloride
1/21/52	412	90	328	645
3/19/52	510	68	240	900
5/7/52	470	56	224	640
6/27/52	490	112	192	572
8/18/52	520	86	240	970
10/20/52	530	78	224	1020
2/23/53	510	74	204	1110
8/24/53	708	78	192	2300
10/12/53	650	96	248	1270
10/16/53	620	90	288	1340
10/20/53	630	88	192	1200
10/22/53	780	140	272	1280

PG20025637

Well Number 1

Date	Hardness	Alkalinity	Sulfate	Chloride
12/13/51	364	76	152	740
1/21/52	356	78	320	656
3/19/52	364	74	256	1020
5/7/52	362	24	272	862
6/17/52	370	110	208	950
8/18/52	420	102	224	970
10/20/52	530	84	208	1650
2/23/53	420	86	234	1174
10/12/53	850	102	304	1310
10/16/53	830	80	316	1320
10/20/53	800	90	256	1440
10/22/53	740	100	196	1380

Well Number 2

1/21/52	414	90	208	640
3/19/52	520	68	240	900
5/7/52	400	56	224	842
6/17/52	490	112	152	872
8/18/52	520	86	240	970
10/20/52	530	70	224	1020
2/23/53	510	74	204	1100
8/24/53	700	78	192	1300
10/12/53	830	96	208	1270
10/16/53	820	90	208	1340
10/20/53	830	80	198	1280
10/22/53	780	100	200	1280

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water analyses

W. H. & L. D. BETZ
PHILADELPHIA 24, PA.

FOR Pacific Gas and Electric
Needles, California

BETZ

sample dated: 2-7-56?

SAMPLING POINT	Well No. 1	Well No. 2	Blended Wells	Lime-Soda Softener	Tower "A" Makeup	Tower "B" Makeup
ANALYSIS NUMBER	B-3206	3207	3205	3208	3203	3204
Ammonia as H_2, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	774	724	752	80	92	110
Calcium as $CaCO_3$, ppm						
Magnesium as $CaCO_3$, ppm						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0	54	68	36
Methyl Orange Alkalinity as $CaCO_3$, ppm	68	70	89	104	136	94
Sulfate as SO_4, ppm	224	320	176	380	288	304
Chloride as Cl, ppm	1640	1700	1580	1400	1660	1640
Silica as SiO_2, ppm						
Total Phosphate as PO_4, ppm						
Ortho Phosphate as PO_4, ppm						
Sulfite as SO_3, ppm						
pH	7.5	7.5	7.3	10.1		
Specific Conductance, micromhos						
Specific Conductance, micromhos (corrected)						
SP-M				+ 4		
M-E				+ 2%		
			LL			

TOP F 0-4-7-7-7

POOR QUALITY ORIGINAL

PG20014562

water analyses

W. H. & L. D. BETZ
PHILADELPHIA 24, PA.

FOR Pacific Gas and Electric
Needles, California

BETZ

sample dated: 3-7-56

SAMPLING POINT	"A" Tower	"B" Tower	"A" Loew	"B" Loew	Aux. Loew	Aux. Jack
ANALYSIS NUMBER	B-3209	3210	3211	3212	3213	3214
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	518	602	792	214	116	98
Calcium as $CaCO_3$, ppm						
Magnesium as $CaCO_3$, ppm						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0	14	0	0
Methyl Orange Alkalinity as $CaCO_3$, ppm	594	188	830	790	580	570
Sulfate as SO_4, ppm	3360	3520	-	-	-	-
Chloride as Cl, ppm	12,080	12,500	2240	3580	1550	1580
Silica as SiO_2, ppm						
Total Phosphate as PO_4, ppm						
Ortho Phosphate as PO_4, ppm						
Sulfite as SO_3, ppm						
pH	7.6	7.1	7.7	8.4	6.9	6.6
Specific Conductance, micromhos						
Specific Conductance, micromhos (corrected)						
Oxygen 13%, ppm	200	224				
Oxygen 10%, ppm			2092	1875	1780	2105
Cycles of Concentration	7.6	7.9				

TOP F

POOR QUALITY ORIGINAL

water analyses

W. H. & L. D. BETZ
PHILADELPHIA 24, PA.

FOR Pacific Gas and Electric
Needles, California

BETZ

sample dated: 3-7-36

SAMPLING POINT	G. M. V. Jack					
ANALYSIS NUMBER	B-328.5					
Ammonia as NH_3, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	136					
Calcium as $CaCO_3$, ppm						
Magnesium as $CaCO_3$, ppm						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	80					
Methyl Orange Alkalinity as $CaCO_3$, ppm	780					
Sulfate as SO_4, ppm	-					
Chloride as Cl, ppm	9,900					
Silica as SiO_2, ppm						
Total Phosphate as PO_4, ppm						
Ortho Phosphate as PO_4, ppm						
Sulfite as SO_3, ppm						
pH	9.5					
Specific Conductance, mm/mhos						
Specific Conductance, mm/mhos (corrected)						
Orthal 109, ppm	1800					

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POOR QUALITY ORIGINAL

PG20014564

BETZ LABORATORIES, INC.
GENERAL OFFICES | ENGINEERING HEADQUARTERS
GILLINGHAM & WORTH STREETS, PHILADELPHIA 24, PA.

CONSULTANTS ON INDUSTRIAL WATER PROBLEMS

June 15, 1979

AIR MAIL

Pacific Gas & Electric Company
P. O. Box 5246 Annex
Bakersfield, California

Attention: Mr. F. E. Glendening
Efficiency Engineer

RE: Pacific Gas & Electric Company
Topock Compressor Station
P. O. Box [illegible]
Needles, California

Cooling System

Gentlemen:

We enclose our analyses for samples taken from pertinent points of the subject system by our district engineer, Mr. Paul Bain, during his regular service visit to your plant on May 21, 1979.

At the time that these samples were obtained, Tower 'A' was being treated by a competitive material. It should be noted that this tower had cycled excessively and balances shown for the sample submitted would definitely indicate that deposition was occurring, at time of sampling. Tower 'B' had also been permitted to concentrate in excess of recommended range, as shown by the 14.3 cycles calculated. While treatment concentration for 'B' tower was satisfactory, the alkalinity value was high, indicating need for increase in feed of sulfuric acid. Satisfactory treatment residuals are shown for all of the closed system samples.

This review for your file shows that we have not received any cooling water control reports from you since those for the period ending April 5, 1979. These reports in our files do show a generally satisfactory control program with proper corrective action taken to prevent undesirable conditions from persisting.

With reference to the corrosion study that was initiated at seven test specimen installations on December 21, 1978, we wish to report that specimens from each location exposed for 29, 58 and 86 days have been received and reweighed by our laboratory. A fourth specimen from each installation is still to be received by us. This fourth specimen will complete the present study. You may be interested

TOP F 0 1 4 7 7 0 0 0
POOR QUALITY ORIGINAL

to know that the results to date indicate that corrosion inhibition at all installations was found to be at, or better than, 1.0 mils per year. May we urge that this fourth specimen be forwarded to us as quickly as possible so that the study may be reported in its entirety.

We are pleased to note that a recent inspection of Tower 'B' by Mr. Heim found that unit to be in good condition.

Very truly yours,

BETZ LABORATORIES, INC.

S. C. Meyer

S. C. Meyer
Engineering Department

SCM/sch
cc: + 5
cc: Mr. P. E. [illegible], Vice President
cc: Mr. E. E. Fisher, Gen. Supt. Gas Pipeline Operation
Enc.

TOP F 0 1 4 7 0 0 9

POOR QUALITY ORIGINAL

PG20014548

water analyses

BETZ LABORATORIES, INC.
PHILADELPHIA 24, PA.

FOR: Pacific Gas & Electric Company
Topock Compressor Station
P. O. Box 62
Needles, California

Cooling System

sample dated: 5-21-79

SAMPLING POINT	Raw	1/2 Storage Tank	'A' Tower (using Conpaltiers Treatment)	'B' Tower	'A' LOEW	'B' LOEW
Ammonia as NH_3, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	568	138	22,000	8440	370	890
Calcium as $CaCO_3$, ppm	324	84	15,000	740	348	850
Magnesium as $CaCO_3$, ppm	184	168	7,000	1700	22	40
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	38	0	0	0	0
Methyl Orange Alkalinity as $CaCO_3$, ppm	112	100	180	152	880	702
Sulfate as SO_4, ppm	265	355	8630	6080		
Chloride as Cl, ppm	68.0	1970	67,700	28,300	652	726
Silica as SiO_2, ppm	10.2	11.5				
Total Phosphate as PO_4, ppm	0.6		0.0	2.6		
Ortho Phosphate as PO_4, ppm	0.6		0.0	1.8		
Sulfite as SO_3, ppm						
pH	7.69	9.69	7.40	7.35	7.65	7.80
Specific Conductance, micromhos						
Specific Conductance, micromhos (corrected)						
Chromate as CrO_4, ppm			108			
Biocide B-196				172		
Biocide 189					2580	8040
Cycles of Conc.			34	14.5		
S P - N		- 84				

POOR QUALITY ORIGINAL

water analyses

BETZ LABORATORIES, INC.
PHILADELPHIA 24, PA.

FOR Pacific Gas & Electric Company
Topock Compressor Station
P. O. Box 62
Needles, California

Cooling System

sample dated: 5-21-59

SAMPLING POINT	[illegible] JW	Aux. 100W	Aux. JW			
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	260	260	272			
Calcium as $CaCO_3$, ppm	240	240	260			
Magnesium as $CaCO_3$, ppm	20	20	12			
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0			
Methyl Orange Alkalinity as $CaCO_3$, ppm	692	766	702			
Sulfate as SO_4, ppm						
Chloride as Cl, ppm	386	368	408			
Silica as SiO_2, ppm						
Total Phosphate as PO_4, ppm						
Ortho Phosphate as PO_4, ppm						
Sulfite as SO_3, ppm						
pH	7.25	7.30	7.60			
Specific Conductance, micromhos						
Specific Conductance, micromhos (corrected)						
Diamodic 109	2215	2400	2080			

RCH

TOP F

POOR QUALITY ORIGINAL

PG20014550

BETZ SERVICE REPORT | INDUSTRIAL WATER CONDITIONING

597.

COMPANY Pacific Gas and Electric DATE 2-7-59.

ADDRESS Topock Compressor Station Needles, Calif.

SYSTEM Cooling - REPORTED TO Mrs. Allen

TESTS	SAMPLES: L/S effluent	L/S effluent + CO_2					CONTROL LIMITS		
P ALK	64	56							
M ALK	108	98							
Hardness	158	134							
Calcium	62	70							

RECOMMENDATIONS

1) CO_2 is being added to the L/S effluent to reduce the pH and increase the Solubility of Calcium Carbonate. This is being done to remove the Calcium Carbonate Scale from the Cooler Make up Lines.

2) The reduction of the Alkalinity indicates that the pH is being reduced some what.

3) The increase in Calcium in this line indicate that the $CaCO_3$ scale is being removed at the rate of 6 to 8 ppm.

signed R. J. Pratt DISTRICT ENGINEER | W BY | ENGINEERING DEP.

BETZ LABORATORIES, INC. • Philadelphia 34 • Pa.

TOP F 0014004

POOR QUALITY ORIGINAL

PG20014523

F

PACIFIC GAS AND ELECTRIC COMPANY COP

Gas Operations
Pipe Line Operations

July 28, 1960

MR. R. S. NABORS:

A short time ago your attention was called to the fact that some recycling is occurring at Topock between blowdown waste and our water supply. At that time Beta Company took samples of the water at various points and they gave us a verbal report of the results today.

Well #1	Potassium Dichromate	11.3ppm
Well #2	Potassium Dichromate	3.1ppm
Well #1	Chlorides	2800ppm
Well #2	Chlorides	2000ppm

Combined waste from tank outlet:
Dichromate #6.2ppm
Chlorides #2400ppm

Although we are not yet in serious trouble, the water problem at Topock is getting worse. It is doubtful that we can expedite the proposed Santa Fe water project sufficiently to give us immediate relief. It would be to our benefit, however, to avoid any unnecessary delays and remove obstacles over which we can exercise control.

HARRY PRUDHOMME

HPP:sb
cc: JSH,RIS,FEG,WVA

TOP F 0 1 4 6 0 0

POOR QUALITY ORIGINAL

PG20014519

water analyses

BETZ LABORATORIES, INC.
PHILADELPHIA, PA. 19124

FOR Pacific Gas and Electric Co.
Topock Compressor Station
P. O. Box C2
Needles, Calif.

Cooling System

sample dated: 2/2/65

SAMPLING POINT	Arizona Well	'A' Tower	'B' Tower	'A' L. O. C. W.	Auxiliary-L. O. C. W.	Plant Eff.-
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	106	480	1240	68	28	548
Calcium as $CaCO_3$, ppm	84	368	944	60	24	408
Magnesium as $CaCO_3$, ppm	22	112	296	8	4	140
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0	0	0	0
Methyl Orange Alkalinity as $CaCO_3$, ppm	100	28	20	986	746	0
Sulfate as SO_4, ppm	61	660	2140	135	245	1080
Chloride as Cl, ppm	400	326	2260	484	336	1135
Silica as SiO_2, ppm	28	125	231			
Total Phosphate as PO_4, ppm		13.7	25.5			
Ortho Phosphate as PO_4, ppm		5.8	21.8			
pH	7.1	6.2	5.6	8.1	7.8	3.5
Specific Conductance, micromhos 18C						
Specific Conductance micromhos 18C (corrected)						
Free mineral acid as $CaCO_3$, ppm						27.0
Bimetallic, ppm		436	338	2360	1810	
Chromate						12.3

PRINTED IN U.S.A.

TOP F

POOR QUALITY ORIGINAL

PG20014510

WATER ANALYSIS

FOR Pacific Gas & Electric Company
Topock Compressor Station
P.O. Box C2
Needles, California

BETZ
TREVOSE, PENNSYLVANIA 19047

Cooling System

SAMPLE DATED: 5-10-67

SAMPLING POINT	Arizona Walls (Tower Makeup)	"A" Tower	"B" Tower	"A" LOCW (Closed Jacket)	Plant Waste Effluent	
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	106	600	470	90	480	
Calcium as $CaCO_3$, ppm	86	436	360	50	348	
Magnesium as $CaCO_3$, ppm	20	164	110	40	72	
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0	0	0	
Methyl Orange Alkalinity as $CaCO_3$, ppm	106	44	66	902	0	
Sulfate as SO_4, ppm	73	985	980	260	1225	
Chloride as Cl, ppm	226	1350	1040	510	1140	
Silica as SiO_2, ppm	30.7	153	119			
Total Phosphate as PO_4, ppm		3.4	6.8			
Ortho Phosphate as PO_4, ppm		1.8	2.4			
pH	7.8	7.0	7.4	8.2	3.0	
Specific Conductance, micromhos 18C						
Specific Conductance, micromhos 18C (corrected)						
Chromate as CrO_4, ppm		17.8	41.7		0.0	
Soluble Zinc as Zn, ppm		2.9	1.2	0.0	2.1	
Free mineral acid as $CaCO_3$, ppm					108	
Diacodic 109				2800		

ENG 104T 12/59

TOP F 0 1 4 6 6 7

POOR QUALITY ORIGINAL

PG20014506

BETZ

SERVICE REPORT

PACIFIC GAS AND ELECTRIC 1/21/68

TOPOCK STATION, NEEDLES, CALIF.

COOLING MR ADLER

TESTS	SAMPLES: TOWER BASIN A	TOWER BASIN B	PIT EFFL	AUX JW	B OCW	ARIZ WELL	CONTROL LIMITS: OPEN	CLOSED
CHROMATE	10	6	NIL				7-12	
pH	7.6	7.1					REQUED	
CALCIUM	445	385				120	450 max	
M' ALK	60	32					40-80	
DIA 109				1750	2320			2000/2500

RECOMMENDATIONS

1) CHROMATE FEED SHOULD BE INCREASED SLIGHTLY IN TOWER B AND THE AUX JACKET WATER SYSTEM.

2) ALL OTHER VALUES ARE WITHIN OR NEAR CONTROL LIMITS

R L Fuller

TOP F 0 1 4 7 0 1

POOR QUALITY ORIGINAL

PG20014540

WATER ANALYSIS

FOR Pacific Gas and Electric
Topock Compressor Station
Needles, California

BETZ
TREVOSE, PENNSYLVANIA 19047

SAMPLE DATED: 9-24-68

SAMPLING POINT	Plant waste water					
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	610					
Calcium as $CaCO_3$, ppm	490					
Magnesium as $CaCO_3$, ppm	120					
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0					
Methyl Orange Alkalinity as $CaCO_3$, ppm	23					
Sulfate as SO_4, ppm	1310					
Chloride as Cl, ppm	1360					
Silica as SiO_2, ppm	132					
Total Phosphate as PO_4, ppm	3.5					
Ortho Phosphate as PO_4, ppm	2.2					
pH	6.5					
Specific Conductance, micromhos 18C						
Specific Conductance, micromhos 18C (corrected)						
Chromate as CrO_4, ppm	0.00					
Chromium as Cr, ppm	17					
Fluoride, Fl	18					

TOP F 0 1 4 7 0 6

PG20014545

BETZ

SERVICE REPORT

COMPANY PACIFIC GAS AND ELECTRIC DATE 9/26/68

ADDRESS TOPOCK COMPRESSOR STATION, NEEDLES, CALIF

SYSTEM COOLING REPORTED TO MR. ADLER

TESTS	SAMPLES: TOWER "A"	BASIN "B"	PLT EFFL.	AUX J.W.	A LOCALS	ARIZ WELLS	CONTROL LIMITS: OPEN	CLOSED
CHROMATE	12	24	NIL				7-12	
pH	7.5	7.6					RECORD	
CALCIUM	530	570				130	450 MAX	
"M" ALK	48	56					40-80	
DIANODIC109				2180	2260			2000-2500

RECOMMENDATIONS

1) THE CALCIUM CONTENT IS HIGH IN BOTH TOWERS DUE TO INSUFFICIENT BLOWDOWN CAPACITY.

2) THE CHROMATE LEVEL IS HIGH IN B AND FEED CAN BE DECREASED.

3) ALL OTHER VALUES ARE WITHIN CONTROL LIMITS.

Signed Richard L. Fellen

TOP F 0 1 4 7 0 7

POOR QUALITY ORIGINAL

PG20014546

BETZ

SERVICE REPORT

COMPANY PACIFIC GAS AND ELECTRIC DATE 12/23/68

ADDRESS TOPOCK STATION, NEEDLES, CALIF.

SYSTEM COOLING ... M. ADLER

TESTS	SAMPLES: TWR BASIN A	TWR BASIN B	PLT EFF.	AUX TW.	A LOCW	ALIZ WELL	CONTROL LIMITS: OPEN	CLOSED
CHROMATE	14	15	10				7-12	
pH	6.1	6.1					RECORD	
CALCIUM	400	380				130	750 MAX	
MALK	12	20		~~1750~~ ~~2100~~			40-80	
DIA 109				1750 2100				2000 - 2500

RECOMMENDATIONS

1) LOW pH AND ALKALINITY VALUES INDICATE NEED FOR DECREASE OF ACID FEED.

2) THE AUX. JACKET WATER IS LOW ON DIANODIC 109

3) ALL OTHER VALUES ARE WITHIN CONTROL LIMITS

[signature]

TOP F 0 1 4 7 0 0

POOR QUALITY ORIGINAL

BETZ

Trevose, Pennsylvania 19047

SERVICE REPORT

COMPANY PACIFIC GAS AND ELECTRIC DATE 1/22/69

ADDRESS TOPOCK COMPRESSOR STATION, NEEDLES, CALIF

SYSTEM COOLING REPORTED TO MR ADER

TESTS	SAMPLES: TOWER BASIN A	TOWER BASIN B	PLANT EFFL	A LOCW	ARIZ WELL		CONTROL LIMITS: OPEN	CLOSED	
CHROMATE	9	7	~~0~~				7-12		
pH	7.4	7.2					RECORD		
CALCIUM	450	400			130		450MAX		
'M' ALC	40	32					40-80		
DIA 109				1960				2000-2500	

RECOMMENDATIONS

- ALL TEST VALUES ARE NEAR OR WITHIN CONTROL LIMITS INDICATING GOOD PLANT CONTROL

signed R L Fuller

TOP F 0 1 4 6 0 7 0

POOR QUALITY ORIGINAL

PG20014538

BETZ

SERVICE REPORT

COMPANY Pacific Gas & Electric DATE 2-6-69

ADDRESS Topock Compressor Plant

SYSTEM Cooling System REPORTED TO Mr Adler

TESTS	SAMPLES: Raw Water	A Tur	B Tur				CONTROL LIMITS		
Total Hard	164	510	520						
Calcium	130	440	420				450		
Magnesium	34	70	100						
"M" Alk	100	60	56				40-80		
Silica SiO_2	30	53	90						
Chloride	400	1440	1300				1300		
Conductance	1300	4300	4000				4000		
TDS	980	3200	2940						
Cycles		3.6	3.05						

RECOMMENDATIONS

1) Upon increasing concentrations to 3.6 cycles Silica & Magnesium started dropping out. Note both Silica & Magnesium values are higher in "B" tower at 3.05 cycles than "A" tower at 3.6 cycles.

2) The circulating water should be held to 4000 mmho until the Betz 403 program is initiated

signed George A. Wood

TOP F 0 1 4 6 9 0

POOR QUALITY ORIGINAL

PG20014537

BETZ

SERVICE REPORT

COMPANY PACIFIC GAS & ELECTRIC DATE 2/13/69

ADDRESS TOPOCK COMPRESSOR STATION, NEEDLES, CALIF.

SYSTEM COOLING REPORTED TO MR. ADER

TESTS	SAMPLES TWRS A	TWRS B	AP12 WELL	EFFL			CONTROL LIMITS		
CHROMATE	15	13		*			7-12		
pH	7.4	7.5					REC		
CALCIUM	720	550	122				600 MAX		
TOTAL HARD.	930	710	160						
MAGNESIUM	210	160	38						
CONDUCTIVITY	6300	4600	1300						
CYCLES DUCK	5.8	45							

RECOMMENDATIONS

1) THE CALCIUM LEVEL HAS BEEN RAISED TO 600 AND WILL BE MAINTAINED AT THIS LEVEL FOR 2 WEEKS IF MAGNESIUM DOES NOT DROP OUT, THEN THE CALCIUM LEVEL CAN BE INCRESED FURTHER.

* PLANT IN PROCESS OF CHANGING SO_2 BOTTLES FOR CrO_4 REMOVAL. NO EFFLUENT SAMPLE TAKEN.

signed R L Fuller

AA BY

TOP F 0 1 4 6 0 7

POOR QUALITY ORIGINAL

BETZ

SERVICE REPORT

COMPANY PACIFIC GAS & ELECTRIC DATE 2/28/69

ADDRESS TOPOCK COMPRESSOR STATION, NEEDLES, CALIF

SYSTEM COOLING REPORTED TO MR. ADLER

TESTS	SAMPLES						CONTROL LIMITS		
	A	B	WELL						
HARDNESS	686	716	163						
CALCIUM	550	570	130					600 MAX	
MAGNESIUM	136	146	33						
Ca. CYCLES	4.2	4.4							
Mg CYCLES	4.1	4.4							

RECOMMENDATIONS

- THE CALCIUM AND MAGNESIUM CYCLES INDICATE NO SERIOUS LOSS OF MAGNESIUM OR CALCIUM AT ~ 4 CYCLES. IT IS RECOMMENDED THAT THE CALCIUM LEVEL BE RAISED TO 700 MAX FOR THE NEXT TWO WEEKS

signed R L Fuller

VV BY

TOP F 0 1 4 6 0 7 0

POOR QUALITY ORIGINAL

PG20014535

BETZ SERVICE REPORT

INDUSTRIAL WATER CONDITIONING

BETZ

COMPANY PACIFIC GAS & ELEC. DATE 3/31/69

ADDRESS TOPACK COMPRESSOR STA. NEEDLES, CALIF

SYSTEM COOLING REPORTED TO MR ADLER

SUBJECT

TEST	TWR A	TWR B	WELL
CALCIUM	850	980	138
MAGNESIUM	240	240	32
CHLORIDES	2600	3000	410
CYCLES Ca	6.1	7.1	
" Mg	6.2	7.4	
" Cl	6.3	7.3	

THERE IS NO INDICATION OF DROPPING OUT OF Ca^{++} OR Mg^{++}. IT IS THEREFORE RECOMMENDED THAT THE TOWERS BE MAINTAINED AT A CALCIUM LEVEL OF APPROX 1000 PPM

signed R. E. Allen

BETZ LABORATORIES, INC. • Philadelphia, Pa. 19124

TOP F 0 1 4 6 0 0 4

POOR QUALITY ORIGINAL

PG20014533

BETZ
THE VOSE PENNSYLVANIA 19342

SERVICE REPORT

COMPANY PACIFIC GAS AND ELECTRIC DATE 4-17-69

ADDRESS TOPOCK COMPRESSOR STA, NEEDLES, CALIF

SYSTEM COOLING REPORTED TO MR. ADLER

TESTS	SAMPLES A	SAMPLES B	SAMPLES WELL				CONTROL LIMITS		
HARDNESS	1265	1030	164						
CALCIUM	1050	240	138				1000-1050		
MAGNESIUM	215	190	26						
CYCLES Ca	7.7	6.2							
CYCLES Mg	8.2	7.1							
BETZ 403	57 *	55 *					50 PPM		

RECOMMENDATIONS

CYCLES INDICATE NO DROPPING OF Ca OR Mg. WE ASSUME NO DROPOUT OF Mg SILICATE BASED ON Mg LEVELS.

THE APPARENT HIGH CYCLES OF Mg IS A RESULT OF THE WELL RUNNING LOW Mg FOR THREE DAYS PRIOR TO TESTING.

IT IS RECOMMENDED THAT PRESENT CALCIUM LEVELS BE MAINTAINED.

* SLIDE RULE ERROR - MULTIPLY BY 8 NOT DIVIDE

Signed [signature]

TOP F 0 1 4 6 0 7

FOOR QUALITY ORIGINAL

PG20014532

BETZ
TRENTON, PENNSYLVANIA 19047

SERVICE REPORT

COMPANY PACIFIC GAS & ELECTRIC DATE 5-28-69

ADDRESS TOPOCK COMPRESSOR STA. NEEDLES CALIF.

SYSTEM COOLING REPORTED TO MR. ADLER

TESTS	SAMPLES A	SAMPLES B	WELL	CYCLES A	CYCLES B	AUTO pH	CONTROL LIMITS		
HARDNESS	1330	1370	150	7.4	7.6				
CALCIUM	1150	1220	160	7.4	7.7		1200 MAX		
MAGNESIUM	150	150	70	7.5	7.5				
pH	7.5	7.5				7.7 A / 7.4 B			
CrO_4	8	10					7-12		
CONDUCT	10000+	10,000							

RECOMMENDATIONS

ALL VALUES ARE WITHIN OR NEAR CONTROL LIMITS. NO APPARENT DROP IN Ca^{++} OR Mg^{++}.

pH INSTRUMENTS WERE CALIBRATE 4-17-69 AND ARE PRESENTLY WITHIN 0.1 pH UNIT OF CHEMICAL SLIDE INDICATORS.

Signed R. L. Tiller

TOP F 0 1 4 6 0 0 7

FOOR QUALITY ORIGINAL

PG20014531

BETZ SERVICE REPORT

INDUSTRIAL WATER CONDITIONING

BETZ

COMPANY PACIFIC GAS & ELECTRIC DATE 7-7-67

ADDRESS TOPOCK COMPRESSOR STA., NEEDLES CALIF

SYSTEM COOLING REPORTED TO MR. ADLER

SUBJECT

TESTS	A	B	WELL	pH READING A	pH READING B		LIMITS
HARDNESS	1100	1130	130				
CALCIUM	930	950	110				1100 MAX
MAGNESIUM	170	180	20				
CYCLES Ca	8.4	8.7					
Mg	8.5	9.0					
403	50	5[illegible]					
CHROMATE	10	12					7-12
pH	7.6	7.2		7.2	7.2		

ALL SYSTEMS ARE WITHIN CONTROL LIMITS.

SAMPLES HAVE BEEN TAKEN FOR DETAIL LAB ANALYSIS

SHOULD MUD & SILT DEPOSITION BECOME A PROBLEM, WE RECOMMEND FEEDING 40.8 IN

signed [signature] | VV BY |

BETZ LABORATORIES, INC. • Philadelphia, Pa. 19124

TOP F 0 1 4 6 9 0

POOR QUALITY ORIGINAL

PG20014529

F

BETZ

SERVICE REPORT

COMPANY Pacific Gas & Electric DATE 11-11-69

ADDRESS Topock Compressor Station, Needles, Calif.

SYSTEM Cooling REPORTED TO Mr. Adler

TESTS	SAMPLES TOWER A	B	Well				CONTROL LIMITS		
Hardness	1130	1140	165						
Calcium	960	960	155				1200 max		
Magnesium	170	160	30						
Chromate	11	19					7-12		
Conductivity	9800	9600					11,000 max		
pH - Mach.	7.0	6.4					6.5-7.0		
pH - Actual	7.1	6.5							

RECOMMENDATIONS

1. Y-7 feed can be decreased in B Tower.

2. All other values are within control limits. There is no indication of calcium or magnesium precipitation.

3. The pH chart for B Tower is plotting an erratic line rather than a fairly straight one. This indicates possible over feed of acid during feed periods. Check for possible dirt on pump contacts. It may also be some moisture in the circuitry due to rain.

4. Recent cost data indicates the use of 403 has not only conserved water but has also cut chemical costs. One further area for savings might be the

Signed

BY

TOP F 0 1 4 6 0 7

FOOR QUALITY ORIGINAL

PG20014526

PG20014527

BETZ

THE LOCK PROPERTY CANADA 19047

SERVICE REPORT

COMPANY Pacific Gas & Electric DATE 11-11-69

ADDRESS Needles, California

SYSTEM Cooling REPORTED TO Mr. Adler

SUBJECT Service Page 2

use of a Betz U-I Chromate Automation Module for feed & control of chromate levels. The unit which sells for $1500 measures chromate levels photometrically.

signed R. A. Fuller

TOP F

0 1 4 6 8 8

POOR QUALITY ORIGINAL

COMPANY PG&E DATE 2/12/72

ADDRESS NEEDLES CALIF

SYSTEM COOLING REPORTED TO MR ADLER

SUBJECT

TESTS	TEST RESULTS						CONTROL LIMITS		
	A	B	RAW						
CHROMATE	8	100							
CONDUCT	11,000	9,000							
pH	6.6	4.8							
CALCIUM	1000	780	120						

1) APPARENTLY A SAMPLE LINE AT BTWR CLOGGED CAUSING THE OVERFEED OF ACID AND Y-7. NOTE THAT THE pH IS IN A HIGHLY CORROSIVE RANGE. IF CAPACITY PERMITS BLOWDOWN SHOULD BE INCREASED TO BRING IN RAW WATER. BARRING THAT CAUSTIC SHOULD BE CAUSTIOUSLY ADDED TO BRING pH UP

SIGNED [signature]

BETZ
TREVOSE PENNSYLVANIA 19047

SYSTEM REVIEW

2

TOP F 0 1 5 0 0 4 7

POOR QUALITY ORIGINAL

PG20014893

WATER ANALYSIS REPORT

FOR Pacific Gas & Electric Company
Hinkley Compressor Station
Barstow, California 92311

SAMPLE DATED 5-25 Re: Cooling System

BETZ
TREVOSE, PENNSYLVANIA 19047

	SAMPLING POINT					
	Makeup	A Tower	B Tower			
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	156	600	860			
Calcium as $CaCO_3$, ppm	118	456	680			
Magnesium as $CaCO_3$, ppm	[illegible]	144	180			
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0			
Methyl Orange Alkalinity as $CaCO_3$, ppm	152	46	96			
Sulfate as SO_4, ppm	64	770	1300			
Chloride as Cl, ppm	40	152	248			
Silica as SiO_2, ppm	29.7					
Total Phosphate as PO_4, ppm	0.0					
Ortho Phosphate as PO_4, ppm						
pH	8.2	7.3	7.9			
Specific Conductance, micromhos 18C	425	1600	2500			
Specific Conductance, micromhos 18C (corrected)						
Total Iron as Fe, ppm	.05	.45	.10			
Complex Phosphate, ppm	—	6	—			
Cycles (cond. basis)		3.8	5.9			

GDR/el 910-2-72

SNG108 8/77 (Rev Page)

TOP G1 0 2 3 5 5 0

PG20023341

WATER ANALYSIS REPORT

FOR Pacific Gas and Electric Company
Hinkley Compressor Station
Barstow, California 92311

SAMPLE DATED 6-9 Re: Cooling System

BETZ
TREVOSE PENNSYLVANIA 19047

	SAMPLING POINT					
	Raw Water	A Tower	B Tower			
Ammonia as H, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	162	710	840			
Calcium as $CaCO_3$, ppm	120	550	650			
Magnesium as $CaCO_3$, ppm	42	160	190			
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0			
Methyl Orange Alkalinity as $CaCO_3$, ppm	150	40	124			
Sulfate as SO_4, ppm	52	290	900			
Chloride as Cl, ppm	40	160	240			
Silica as SiO_2, ppm	29.0					
Total Phosphate as PO_4, ppm						
Ortho Phosphate as PO_4, ppm						
pH	7.6	7.2	8.0			
Specific Conductance, micromhos 18C	400	1600	2500			
Specific Conductance, micromhos 18C (corrected)						
Total Copper as Cu, ppm	.02	.17	.04			
Total Iron as Fe, ppm	.05	.05	.05			
Complex PO_4		5				
Cycles (Cond. Basis)		4.0	6.3			

GDR/al 10-2-72

ENG108 8/71 (Six Part)

TOP G1

PG20023342

WATER ANALYSIS REPORT

FOR: Pacific Gas and Electric
Needles, California

System: Cooling

SAMPLE DATED: 7/11/77

BETZ
TREVOSE PENNSYLVANIA 19047

	SAMPLING POINT					
	RAW H_2O	Tower A	Tower B	P LOCW	K Jacket H_2O	P Jacket H_2O
Ammonia as N, ppm	0.03					
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	169	1742	1441	4.4	4.0	3.8
Calcium as $CaCO_3$, ppm	114	980	790			
Magnesium as $CaCO_3$, ppm	55	762	651			
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	0	38	52	41
Methyl Orange Alkalinity as $CaCO_3$, ppm	92	20	0	320	292	252
Sulfate as SO_4, ppm	127	2126	1849	122	126	119
Chloride as Cl, ppm	503	5148	4305	517	561	483
Silica as SiO_2, ppm	24.6	167	163	21.0	17.3	20.1
Total Phosphate as PO_4, ppm		2.8	2.8	0.7	0.4	<0.4
Ortho Phosphate as PO_4, ppm	0.1	1.5	2.5	0.6	0.4	0.3
pH	8.1	6.4	4.3	9.7	9.8	9.8
Specific Conductance, micromhos 18C						
Specific Conductance, micromhos 18C (corrected)						
Specific Conductance micromhos 25C	1770	14000	11500	2790	2800	2500
Chromate as CrO_4 ppm		6.9	2.6	384	267	268
Chromium as Cr ppm		1.3	0.9	0.0	12.2	9.5
Total Copper as Cu, ppm	<.01	.06	.04	.64	.17	.18
Total Iron as Fe, ppm	<.05	1.1	0.3	2.2	2.1	2.3
Soluble Zinc as Zn, ppm	0.1	2.3	7.0	0.2	0.1	0.2
Cycles		10.2	8.6			
Total Inorganic Phos as PO_4, ppm	0.2	1.5	2.5	0.7	0.4	0.3

ENG108 (Six Part) 7106

TOP B6 1 0 8 3 4 0

PG20034382

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE 7-11-77
ADDRESS Needles, California
SYSTEM Cooling REPORTED TO J. Lackey

SUBJECT: Corrosion Coupon Results

Specimen #	Type Metal	Days Exposed	Average Penetration mils/year	
K473	ADM	94	0.2	ALOCW
KC673	MS	60	0.9	K-JW
KC676	MS	60	0.8	B Tower
KD689	MS	119	0.4	A Tower

Again we are getting excellent corrosion protection in our systems. The only change from last month was an improvement in "A" Tower results from 0.6 to 0.4 mils/year. The next step for the open systems would be to try and reduce tower blowdown and increase cycles of concentration. We could increase the calcium limit by 100 ppm and see if we can prevent deposition by the proper feed of Betz 430. We would still use the chloride test and the coupons to determine our progress.

Patrick J. Walsh

ENGR (FIVE PART) 1309

TOP F 0 1 4 5 7 0

POOR QUALITY ORIGINAL

PG20014369

BETZ
TREVOSE, PENNSYLVANIA 19047

SERVICE REVIEW

COMPANY Mr. Dennis Woods - Pacific Gas & Elec. CUST. NO.
ADDRESS Topock CA.
cc. Bob Pratt

Below, please find the results of our most recent lab analyses of your cooling systems.
Date Sampled 4-19-78

	Aux Lube oil	Lube Oil A	Lube Oil B	C.T. A	C.T. B	Main Jacket	Aux Jacket
pH	9.1	8.2	9.1	6.5	4.9	10.0	9.8
Conductivity	2166	6100	7600	13000	9000	2658	2922
palk	18	0	35	0	0	64	49
malk	327	793	1003	12	7	331	298
$SO_4^{=}$	107	345	495	945	821	130	111
Cl^-	407	1234	1756	4650	4232	666	543
T-Hard	16	41	55	1301	1200	6	<10
Ca	<10	36	40	1160	980	—	—
Mg	—	5	15	141	220	—	—
CrO_4	271	1374	1624	7.8	7.4	271	278
NO_2							23

Control limits are as follows.
Ca. 1000-1050 ppm in the C.T.s
CrO_4 7-12 ppm in the C.T.s
1000-1500 ppm in the LOCW
250-300 ppm in Main J.W, Aux J.W., and Aux LOCW
pH 6.2-6.8 in C.T.s

SIGNED [illegible] ALPHA NO 30 [illegible]

ENGINS (FIVE PART) 1/70

2

TOP F 0 7 4 7 0 4

POOR QUALITY ORIGINAL

PG20014154

WATER ANALYSIS REPORT

FOR: Pacific Gas & Electric
Topock, CA

System: Cooling

SAMPLE DATED: 7/7/78

BETZ
TREVOSE, PENNSYLVANIA 19047

	SAMPLING POINT					
	Raw M.U.	C.T. A	Lube Oil A	B	C.T. B	Main Jacket
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	154	1172	52	44	1315	12
Calcium as $CaCO_3$, ppm	118	830	28	40	790	
Magnesium as $CaCO_3$, ppm	36	342	24	4	525	
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	5	23	0	18
Methyl Orange Alkalinity as $CaCO_3$, ppm	78	26	752	870	8	184
Sulfate as SO_4, ppm	136	1357	292	549	1242	150
Chloride as Cl, ppm	466	3315	1029	1359	2707	502
Silica as SiO_2, ppm	26.	136.	48.	58	146	16.5
Total Phosphate as PO_4, ppm		6.0	1.6	1.5	5.8	0.4
Total Inorganic Phosphate as PO_4, ppm	0.2	1.0	1.1	1.4	2.9	0.4
Ortho Phosphate as PO_4, ppm	0.1	0.7	0.7	1.0	2.0	0.1
pH	8.1	6.5	8.4	8.8	5.0	9.3
Specific Conductance, micromhos, 18C						
Specific Conductance, micromhos, 18C (corrected)						
Specific Conductance, micromhos, 25C	1727	8000	5000	6000	10000	2225
Specific Conductance, micromhos, 25C (corrected)						
Total Copper as Cu		0.1	1.9	1.5	0.1	0.2
Total Iron as Fe	0.4	2.5	0.2	.05	2.0	2.5

ENG108 (Six-Part) 7412

TOP B6 1 0 8 3 2 8

WATER ANALYSIS REPORT

FOR: Pacific Gas & Electric
Topock, CA

System: Cooling

SAMPLE DATED: 7/7/78

BETZ
TREVOSE, PENNSYLVANIA 19047

	SAMPLING POINT					
	AUX Jacket	Aux Lube Oil				
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	2.5	3.0				
Calcium as $CaCO_3$, ppm						
Magnesium as $CaCO_3$, ppm						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	14	27				
Methyl Orange Alkalinity as $CaCO_3$, ppm	247	357				
Sulfate as SO_4, ppm	157	138				
Chloride as Cl, ppm	465	473				
Silica as SiO_2, ppm	21.	18.9				
Total Phosphate as PO_4, ppm	0.2	0.4				
Total Inorganic Phosphate as PO_4, ppm	0.2	0.3				
Ortho Phosphate as PO_4, ppm	0.1	0.2				
pH	9.0	9.2				
Specific Conductance, micromhos, 18C						
Specific Conductance, micromhos, 18C (corrected)						
Specific Conductance, micromhos, 28C	2599	2364				
Specific Conductance, micromhos, 28C (corrected)						
Chromate as CrO_4	262	386				
Total Copper as Cu	0.2	0.1				
Total Iron as Fe	1.2	0.2				

ENG108 (Six-Part) 7412

TOP B6

1 0 8 3 2 9

PG20034371

ADMINISTRATION USE ONLY

DM E.H. Butcher RES

REP A. Sacoyatte SE

BETZ
TREVOSE, PENNSYLVANIA 19047

ANALYTICAL WORKSHEET

Values marked "*" have been rerun. LAB 121A 7707

731

Client Name: P. G & E

Plant Location: TOPOCK CA

Plant or Unit:

System: ☐ BOILER ☐ EXT TREAT. ☒ COOLING ☐ PROCESS ☐ SCRUBBER

Date Sampled: 7-7

Sampled by: BREA TEAM

Alpha No.: 36 L

Date Received: 7-18

Date Analyzed: 731

☒ SERVICE ☐ PROPOSAL

Duplicate? ☒ Yes ☐ No

REFER TO: T-H

QPS ALL

DETERMINATION		09509 RAW M.U.	09510 C.T. A	09511 LUBE OIL A	09512 → B	09513 C.T. B	09514 MAIN JACKET
Ammonia as N, ppm	1						
Carbon Dioxide as CO_2, ppm	2						
pH	19	8x1	6x5	8x4	8x8	5x0	9x3
Specific Conductance, micromhos 25C	21	17x7	8000	5000	6000	10000	2225
Specific Conductance, micromhos 25C (at pH 8.3)	22						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	6	0	0	5	23	0	18
Methyl Orange Alkalinity as $CaCO_3$, ppm	7	78	26	752	870	8	184
Sulfate and Sulfite as SO_4, ppm	11	134	1357	292	549	12x2	150
Chloride as Cl, ppm	12	466	3315	1029	1359	2207	502
Total Hardness as $CaCO_3$, ppm	3	154	1172	52	44	1315	12
Calcium as $CaCO_3$, ppm	4	118	830	28	40	790	
Magnesium as $CaCO_3$, ppm	5	36	342	24	4	525	
Silica as SiO_2, ppm	13	26x	136x	48x	58x	146x	16x5
Total Phosphate as PO_4, ppm	14		6x0	1x6	1x5	5x8	0x4
Total Inorganic Phosphate as PO_4, ppm	15	0x2	1x0	1x1	1x4	2x9	0x4
Ortho Phosphate as PO_4, ppm	16	0x1	0x7	0x7	1x0	2x0	0x1
Chromate as CrO_4, ppm	17		9x9	926	1328	14x2	278
Chromium as Cr, ppm	18						
Total Copper as Cu, ppm	25		0x1	1x9	1x5	0x1	0x2
Total Iron as Fe, ppm	23	0x4	2x5	0x2	X05	2x0	2x5
Soluble Zinc as Zn, ppm	39						

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AUG 01 1978

TOP B6 - 0 8 3 7 6

PG20034368

ADMINISTRATION USE ONLY

DM _____ RES _____

REP _____ SE _____

BETZ
TREVOSE PENNSYLVANIA 19047

ANALYTICAL WORKSHEET

Values marked "*" have been rerun. LAB121A 7707

Plant Name: P. G + E Date Sampled: 7-7 Date Received: 7-19

Plant Location: TOPOCK CA Sampled by: BREATEAL Date Analyzed: _____

Plant or Unit: _____ Alpha No.: 36 L ☒ SERVICE ☐ PROPOSAL

System: ☐ BOILER ☐ EXT. TREAT ☒ COOLING ☐ PROCESS ☐ SCRUBBER ☐ _____ Duplicates? ☒ Yes ☐ No

REFER TO: T-H
DPS ALL

DETERMINATION		09515 AUX VACUUM	09516 AUX LUBE OIL	SAMPLING POINT							
Ammonia as N, ppm	1										
Carbon Dioxide as CO_2, ppm	2										
pH	19	9x0	9x2								
Specific Conductance, micromhos 25C	21	2599	2364								
Specific Conductance, micromhos 25C (at pH 8.3)	22										
Phenolphthalein Alkalinity as $CaCO_3$, ppm	6	14	27								
Methyl Orange Alkalinity as $CaCO_3$, ppm	7	247	357								
Sulfate and Sulfite as SO_4, ppm	11	157	138								
Chloride as Cl, ppm	12	465	423								
Total Hardness as $CaCO_3$, ppm	3	2x5	3x0								
Calcium as $CaCO_3$, ppm	4										
Magnesium as $CaCO_3$, ppm	5										
Silica as SiO_2, ppm	13	21x	18x9								
Total Phosphate as PO_4, ppm	14	0x2	0x4								
Total Inorganic Phosphate as PO_4, ppm	15	0x2	0x3								
Ortho Phosphate as PO_4, ppm	16	0x1	0x2								
Chromate as CrO_4, ppm	17	262	386								
Chromium as Cr, ppm	18										
Total Copper as Cu, ppm	25	0x2	0x1								
Total Iron as Fe, ppm	23	1x2	0x2								
Soluble Zinc as Zn, ppm	39										

TOP B6 108327

PG20034369

BETZ LABORATORIES, INC.

SOMERTON ROAD • TREVOSE, PENNSYLVANIA 19047 • U.S.A. / TELEPHONE 215 • 355-3300 • TELEX 84-5108
DISTRICT OFFICE SUITE 201 • 118 WEST AIRPORT BOULEVARD • SAN BERNARDINO CALIFORNIA 92408 • TELEPHONE 714 • 886-0171

August 10, 1978

Pacific Gas and Electric
Topock Compressor Station
PO Box 337
Needles, CA 92363

Attention: Mr. Dennis Woods

Dear Mr. Woods:

Please find attached, a summary of water analysis performed on your cooling systems last month.

All control parameters are within acceptable limits. Control appears to be excellent. The only point of comment is that the chromate values obtained by the operational personnel are consistently higher than that found by our test labs. The chromate titration solution should be made up fresh every other week. If this is not done, the solution oxidizes and looses strength giving falsely high reading.

A change in control parameters for the lube oil systems is in order. The chromate control should be changed from 1000-1500 to 800-1000. There should be absolutely no loss in corrosion protection from this change. Corrosion rates however, will be monitored to check any acceleration corrosivity.

If there are any questions regarding this report, please feel free to contact us.

Regards,

BETZ LABORATORIES, INC.

L. David Brazeale

L.D. Brazeale
Technical Specialist

cc: Mr. Bob Pratt

LDB/ss

TOP F 0 1 4 3 5 1

PG20014190

WATER ANALYSIS REPORT

FOR PG&E
Topock, CA

System: Cooling

SAMPLE DATED 9/15/78

BETZ
TREVOSE PENNSYLVANIA 19047

	SAMPLING POINT					
	Main Aux Jacket		A CT	B CT	LOCW	A LOCW
Ammonia as N, ppm						
Carbon Dioxide as CO_2 ppm						
Total Hardness as $CaCO_3$, ppm						
Calcium as $CaCO_3$, ppm	1.1	0.1	913	525	0.3	37
Magnesium as $CaCO_3$, ppm			714	427		19.0
Phenolphthalein Alkalinity as $CaCO_3$, ppm			199	98		18
Methyl Orange Alkalinity as $CaCO_3$, ppm	39	73	0	0	40	11
Sulfate as SO_4, ppm	216	325	22	23	353	61
Chloride as Cl, ppm	115	131	1253	698	113	279
Silica as SiO_2, ppm	472	532	2008	1454	472	901
Total Phosphate as PO_4, ppm	15.3	17.6	133.	96.	20.	52.
Total Inorganic Phosphate as PO_4, ppm	0.2	0.3	6.4	7.2	1.2	1.8
Ortho Phosphate as PO_4, ppm	0.2	0.2	2.3	3.0	0.5	0.8
pH	0.1	0.1	2.0	2.5	0.5	0.7
Specific Conductance, micromhos, 18C	9.9	10.1	5.8	5.8	9.6	8.7
Specific Conductance, micromhos, 18C (corrected)						
Specific Conductance, micromhos, 25C						
Specific Conductance, micromhos, 25C (corrected)	2258	2864	11,000	5000	2334	6500
Chromate as CrO_4, ppm	146.3	277.9	32.2	22.2	307.4	1079.9
Total Copper as Cu, ppm	<.05	0.5	0.2	0.2	0.2	0.7
Total Iron as Fe, ppm	0.3	7.3	2.0	1.9	0.5	0.7

ENG 108 (Rev Feb) 7412

TOP B6 - 0833 5

WATER ANALYSIS REPORT

FOR PG&E
Topock, CA

System: Cooling

SAMPLE DATED 9/15/78

BETZ
TREVOSE PENNSYLVANIA 19047

	SAMPLING POINT					
	B LOCW					
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm	52					
Calcium as $CaCO_3$, ppm	35					
Magnesium as $CaCO_3$, ppm	17					
Phenolphthalein Alkalinity as $CaCO_3$, ppm	15					
Methyl Orange Alkalinity as $CaCO_3$, ppm	886					
Sulfate as SO_4, ppm	461					
Chloride as Cl, ppm	1245					
Silica as SiO_2, ppm	61.					
Total Phosphate as PO_4, ppm	1.4					
Total Inorganic Phosphate as PO_4, ppm	1.2					
Ortho Phosphate as PO_4, ppm	0.9					
pH	8.7					
Specific Conductance, micromhos, 18C						
Specific Conductance, micromhos, 18C (corrected)						
Specific Conductance, micromhos, 25C	7300					
Specific Conductance, micromhos, 25C (corrected)						
Chromate as CrO_4, ppm	106.6					
Total Copper as Cu, ppm	0.3					
Total Iron as Fe, ppm	0.2					

ENG108 (Six Part) 7412

TOP B6

1 0 8 3 3 6

PG20034378

ADMINISTRATION USE ONLY

FROM E. H. DRITTENETT Westwood, N.J. RES

REP. D. Bruzzese SE

BETZ TRENTON, PENNSYLVANIA 19047

ANALYTICAL WORKSHEET

Values marked "✓" have been rerun. LAB121A 7707

1-3

Plant Name: PG&E

Plant Location: Topeka Kan.

Plant or Unit:

System: ☐ BOILER ☐ EXT. TREAT ☑ COOLING ☐ PROCESS ☐ SCRUBBER ☐

Date Sampled: 9-15 Date Received: 9-21

Sampled by: Bruzzese Date Analyzed: 10-3

Alpha No.: 36L ☑ SERVICE ☐ PROPOSAL

Duplicates? ☑ Yes ☐ No

REFER TO: T. H.

DETERMINATION		09462	09463	09464	09465	09466	09467
		Drain Out Jacket →		A CT	B CT	LOCW	A LOCW
Ammonia as N, ppm	1						
Carbon Dioxide as CO_2, ppm	2						
pH	19	9x9	10x1	5x8	5x8	9x6	8x7
Specific Conductance, micromhos 25C	21	2258	2864	11000	5000	2334	6500
Specific Conductance, micromhos 25C (at pH 8.3)	22						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	6	39	73	0	0	40	11
Methyl Orange Alkalinity as $CaCO_3$, ppm	7	216	325	22	23	353	61
Sulfate and Sulfite as SO_4, ppm	11	115	131	1253	698	113	279
Chloride as Cl, ppm	12	472	532	2008	1454	472	901
Total Hardness as $CaCO_3$, ppm	3	1x1	<0x1	913	525	0x3	37
Calcium as $CaCO_3$, ppm	4			714	427		19x0
Magnesium as $CaCO_3$, ppm	5			199	98		18
Silica as SiO_2, ppm	13	15x3	17x6	133x	96x	20x	52x
Total Phosphate as PO_4, ppm	14	0x2	0x3	6x4	7x2	1x2	1x8
Total Inorganic Phosphate as PO_4, ppm	15	0x2	0x2	2x3	3x0	0x5	0x8
Ortho Phosphate as PO_4, ppm	16	0x1	0x1	2x0	2x5	0x5	0x7
Chromate as CrO_4, ppm	17	146x3	277x9	32x2	22x2	307x4	1079x9
Chromium as Cr, ppm	18						
Total Copper as Cu, ppm	25	0x5	0x5	0x2	0x2	0x2	0x7
Total Iron as Fe, ppm	23	0x3	7x3	2x0	1x9	0x5	0x7
Soluble Zinc as Zn, ppm	39						

XEROX COPY SENT OCT 04 1978

OCT 4 1978

TOP B6 1 0 0 3 3 7

PG20034379

ADMINISTRATION USE ONLY

DM _____ RES _____

REP _____ SE _____

BETZ

TRIVOSE PENNSYLVANIA 19047

ANALYTICAL WORKSHEET

Values marked "✓" have been rerun. LAB121A 7707

Plant Name: PG&E

Plant Location: Topock, Cal.

Plant or Unit: _____

System: ☐ BOILER ☐ EXT TREAT ☑ COOLING ☐ PROCESS ☐ SCRUBBER

Date Sampled: 9-15

Sampled by: Creazcale

Alpha No.: 36L

Date Received: 9-21

Date Analyzed: _____

☑ SERVICE ☐ PROPOSAL

☐ _____

Duplicates? ☑ Yes ☐ No

REFER TO: T. H. 09468

DETERMINATION		SAMPLING POINT: B LOCW									
Ammonia as N, ppm	1										
Carbon Dioxide as CO_2, ppm	2										
pH	19	8x7									
Specific Conductance, micrombos 25C	21	7300									
Specific Conductance, micrombos 25C (at pH 8.3)	22										
Phenolphthalein Alkalinity as $CaCO_3$, ppm	6	15									
Methyl Orange Alkalinity as $CaCO_3$, ppm	7	886									
Sulfate and Sulfite as SO_4, ppm	11	461									
Chloride as Cl, ppm	12	1245									
Total Hardness as $CaCO_3$, ppm	3	52									
Calcium as $CaCO_3$, ppm	4	35									
Magnesium as $CaCO_3$, ppm	5	17									
Silica as SiO_2, ppm	13	61x									
Total Phosphate as PO_4, ppm	14	1x4									
Total Inorganic Phosphate as PO_4, ppm	15	1x2									
Ortho Phosphate as PO_4, ppm	16	0x9									
Chromate as CrO_4, ppm	17	106x6									
Chromium as Cr, ppm	18										
Total Copper as Cu, ppm	25	0x3									
Total Iron as Fe, ppm	23	0x2									
Soluble Zinc as Zn, ppm	39										

L

TOP B6 108338

PG20034380

BETZ LABORATORIES, INC.

SOMERTON ROAD · TREVOSE, PENNSYLVANIA 19047 · U.S.A. / TELEPHONE 215 · 355-3300 · TELEX 84-5159
DISTRICT OFFICE SUITE 201 · 118 WEST AIRPORT BOULEVARD · SAN BERNARDINO, CALIFORNIA 92408 · TELEPHONE 714 889-0171

October 9, 1978

Pacific Gas & Electric
Topock Compressor Station
PO Box 337
Neeldes, CA 92363

Attention: Mr. Dennis Woods
Mr. Bob Pratt

Gentlemen:

Please find attached, a copy of an analysis report run on your cooling systems. As you will notice, there is some difference between the calcium and chloride values which our lab generated and those of your plant. If there is any question regarding the age of your reagents, they should be discarded and fresh reagents be substituted.

If there is any question regarding this report, please feel free to contact us at (714) 889-0171.

Regards,

BETZ LABORATOIRES, INC.

L. David Breazeale

L. Dave Breazeale
Technical Specialist

LDB/ss

attachmant

TOP F 0 1 4 3 4 8

PG20014187

BETZ LABORATORIES, INC.

BOMERTON ROAD • TREVOSE, PENNSYLVANIA 19047 • U.S.A. / TELEPHONE 215 • 355-3300 • TELEX 84-5158
DISTRICT OFFICE SUITE 201 • 110 WEST AIRPORT BOULEVARD • SAN BERNARDINO CALIFORNIA 92408 • TELEPHONE 714 • 889-0171

November 2, 1978

Pacific Gas & Electric
Topock Compressor Station
Needles, CA 92363

Attention: Mr. Dennis Woods
Mr. Bob Pratt

Gentlemen:

This letter refers to our conversation during my last service call at your plant. During this meeting, we decided to switch from Betz Orocol to Krom Trol X-5 in your closed loop system. The chromate level should be maintained at 250-300 ppm using the existing Krom Trol testing procedure.

The pH in Cooling Towers A and B may be controlled by m-alkalinity rather than using the colorimetric pH slide. The m-alk should be controlled at 14-24 ppm. This will maintian a reasonable pH in the recirculating water.

If there are any questions regarding these modifications, please feel free to contact us at (714) 889-0171.

Regards,

BETZ LABORATORIES, INC.

L. David Breazeale

L. Dave Breazeale
Technical Specialist

LDB/ss

TOP F 0 1 4 4 8 8

PG20014327

WATER ANALYSIS REPORT

BETZ
TREVOSE, PENNSYLVANIA 19047

: PACIFIC GAS & ELEC.
POCK COMP. STAT.
EDLES, CALIF.92363

L36 L.D. BREAZEALE

2/01/79

APLE DATED:

		SAMPLING POINT					
		ACT	AUXJW	AUXLUB	BCT		
		01172	01173	01174	01175	00000	00000
honia as N, ppm	1						
on Dioxide as CO_2, ppm	2						
	19	5.8	9.9	9.1	4.8		
fic Conductance, micromhos 25C	21	6000	2801	1231	6000		
fic Conductance, icromhos 25C (at pH 8.3)	22						
olphthalic Alkalinity as $CaCO_3$, ppm	6	0	82	13	0		
y) Orange Alkalinity as $CaCO_3$, ppm	7	13	370	197	10		
te and Sulfate as SO_4, ppm	11	1078	99	47	1169		
ride as Cl, ppm	12	3484	481	148	1142		
Hard as $CaCO_3$, ppm	3	736	1.4	1.9	779		
um as $CaCO_3$, ppm	4	562			652		
sium as $CaCO_3$, ppm	5	174			127		
as SiO_2, ppm	13	75.	18.	15.0	68.		
Phosphate as PO_4, ppm	14						
Inorganic Phosphate as PO_4, ppm	15						
Phosphate as PO_4, ppm	16						
mate as CrO_4, ppm	17	10.2	248	170	4.0		
mium as Cr, ppm	18	0.0	0.0	0.0	0.0		
Copper as Cu, ppm	25	0.1	0.2	L .05	0.3		
Iron as Fe, ppm	23	2.0	1.0	.05	2.4		
ble Zinc as Zn, ppm	39						

TOP B6 1 0 8 5 2 2

PG20034565

WATER ANALYSIS REPORT

BETZ
TREVOSE PENNSYLVANIA 19047

PACIFIC GAS & ELEC.
[illegible]PCCK COMP. STAT.
EDLES, CALIF.92363

136 L.D. BREAZEALE

MPLE DATED: 2/01/79

		SAMPLING POINT					
		MAINJ					
		0117	00000	00000	00000	00000	00000
nonia as N, ppm	1						
on Dioxide as CO_2, ppm	2						
	19	9.6					
ific Conductance, micromhos 25C	21	2189					
ific Conductance, icromhos 25C (at pH 8.3)	22						
olphthalein Alkalinity as $CaCO_3$, ppm	6	41					
yl Orange Alkalinity as $CaCO_3$, ppm	7	227					
te and Sulfite as SO_4, ppm	11	50					
ride as Cl, ppm	12	170					
Hardness as $CaCO_3$, ppm	3						
um as $CaCO_3$, ppm	4	L 10					
esium as $CaCO_3$, ppm	5						
as SiO_2, ppm	13	20.7					
Phosphate as PO_4, ppm	14						
Inorganic Phosphate as PO_4, ppm	15						
Phosphate as PO_4, ppm	16						
mate as CrO_4, ppm	17	154					
mium as Cr, ppm	18	0.0					
Copper as Cu, ppm	25	0.6					
Iron as Fe, ppm	23	5.6					
de Zinc as Zn, ppm	39						

TOP B6 1 0 8 5 2 3

BETZ LABORATORIES, INC.

SOMERTON ROAD • TREVOSE, PENNSYLVANIA 19047 • U.S.A. / TELEPHONE: 215-355-3300 • TELEX: 84-5158
DISTRICT OFFICE: SUITE 201 • 118 WEST AIRPORT BOULEVARD • SAN BERNARDINO, CALIFORNIA 92408 • TELEPHONE: 714-886-0171

February 12, 1979

Pacific Gas & Electric Company
Topock Compressor Station
Needles, CA 92363

Attention: Mr. Dennis Woods
Mr. Bob Pratt

Gentlemen:

On February 9, 1979, during a service call at your plant, a microbiological test was run. The results are as follows:

CTA 1,000 colonies/ml

CTB 50,000 colonies/ml

During this call, we discussed alterations to the biocide program. It is suggested that biocide C-30 be discontinued. Slimicide J-12 should be substituted for the C-30 and fed at a rate of 3.5 gallons per addition per tower based on a 67,000 gallon tower volume.

If there are any questions regarding this change, please feel free to contact us.

Regards,

BETZ LABORATORIES, INC.

L. Dave Breateale
Technical Specialist

LDB/ss

TOP F 0 1 4 4 0 7

PG20014326

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas & Electric DATE 4-12-79
ADDRESS Topock CA CUST. NO.
SYSTEM Cooling REPORTED TO Mr. Wood, Mr. Pratt

	"K" Jacket	"P" Jacket	cwx LOCW	A.C.T.	B.C.T.
CrO_4	262	271	279	10	10
Ca				940	588
Cl^-	520	480	450	3120	2256

These tests were run on the same samples and used by the lab. The results correlated very well. All systems are within control on chromate. The A and B LOCW systems were omitted since no water was recirculating in either system.

SIGNED [signature]

ENQ107 (FIVE PART) 7809

TOP F 0 1 3 3 0 0

POOR QUALITY ORIGINAL

PG20014325

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas & Electric Co. DATE 7-11-79
ADDRESS Topock CA
SYSTEM Cooling Systems REPORTED TO Mr. D. Woods, B. Pratt

TESTS	TEST RESULTS						CONTROL LIMITS		
	Makeup	CTA	CTB	LOCWA	LOCWB	KJW	PJW	PLOCW	
pH	7.7	6.2	6.0						
m-alk	68	24	16						
cond	1500	10,000	11,600						
Cl^-	392	3394	3980						
T-Hard	144	1050	1314						
Ca	120	876	1086						
Mg	24	184	228						
CrO_4		12	24	259	938	260	372	316	

1. The test results are in excellent agreement with the plant tests.
2. All systems appear to be in control at the time of testing.
3. Microbiological samples have been taken. Results will be forwarded as soon as possible.
4. BLOCW system seems to be a little high on chromate.

SIGNED J. David Gregory

LN0106 (FIVE PART) 7300

TOP F 0 1 4 4 8 5

POOR QUALITY ORIGINAL

PG20014324

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE March 12, 1980
ADDRESS Topock Compressor Station CUST. NO.
SYSTEM Cooling REPORTED TO D. Wood, G. Dolan

As a follow up to your call regarding a spread in calculated calcium vs actual calcium please see attached control report. On red you will find the numbers on the day in question.

① On both tower A + B the tested calcium was the same @ 1250 ppm. Because both towers are on same makeup this would indicate similar levels of cycling

② However, testing indicates that there is significant variance on test results

③ Also, you should expect that all parameters would be similar. However, calculated and actual % difference differ greatly.

Because there is a new person running tests we think the variance lies mainly with proper running of the chloride test which you use to calculate cycles. If the end point is read when the sample turns dark orange there will be significant variation in test results (i.e.: Tower A chlorides = 5100 Tower B - 5850) and calculated calcium which is based on accurate cycle determination

→ Proper cycle + chloride determination was discussed with operators. Until testing stabilizes hold Calcium not to exceed 1200-1300 ppm range.

→ More work done on A-Loop proper/report to follow - Increase chromate to 300-400 ppm range.

SIGNED Steve Justus

END107 (FIVE PART) 7800

2

TOP F 0 2 2 0 5 0 4 7

POOR QUALITY ORIGINAL

PG20021857

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY PACIFIC GAS + ELECTRIC DATE 7-31-80
ADDRESS TOPOCK COMPRESSION STATION
SYSTEM COOLING REPORTED TO 1st PAGE

④ Copper levels in both A and B lube oil systems very high. Suggest the following:

a) Continue to bleed A system until hardness falls to 25 ppm
b) At that point sample A+B system & send to my office for copper analysis.
c) Place new steel & copper coupons in service for 30 days.
d) At end of 30 days pull coupons & resample water for copper & iron analysis.

If copper continues high we will suggest purchase of 1 drum of Betz 562B

⑤ Review of fluctuations in log for chromate test also show no addition of chemical. With no additions, any of the closed cooling loops should show no more than a 5 ppm fluctuation. Review testing procedure —

⑥ We received samples of Well #1 makeup. Our testing showed very little fluctuation in values: Calcium 96-100 ppm, chlorides 212-220 ppm. Reran some of the samples today with your reagents with following results:

Calcium	6-26	96	86	6-30	96	102	Betz left column each set
Chlorides		212	216		216	226	Topock results logged in right

SIGNED Steve Gustus

TOP F 0 1 4 4 0 0 1

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE August 22, 1980
ADDRESS Needles, California
SYSTEM Cooling REPORTED TO D. Wood, D. Davis

TESTS	TEST RESULTS						CONTROL LIMITS		
	A-Tower	B-Tower	A-Low	B-Low			Closed	Towers	
Copper	—	—	.94	.60			<.10	<.10	
Org. PO4 (430)	18.0	21.0						3-5ppm	
Total Bacteria	<10,000	<10,000	<100	<100			<100	<100,000	

① Reviewed operators testing and accuracy and found to be very good. We ran chromate tests on a spectrophotometer and found his results to be very accurate. We appreciate John Taylor's attention to testing

② Review of operators logs show high calcium levels in A tower. This increases dramatically the chances for scaling and impeded heat transfer.

③ Copper levels persistently high in A+B low systems. Suggest all copper bearing systems be routinely treated for copper corrosion with Betz 562B to lessen mild steel corrosion rates due to galvanic action.

④ Both tower A+B severely overdosed with Betz 430. Apparently operator is feeding recommended dosages to each cell rather than just one dose to tower.

SIGNED: Steve Justus / John Herrold

ENG106 (FIVE PART) 7811

TOP F 0144108

PG20014257

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE August 22, 1980
ADDRESS Topock Compression Station, Needles, Calif
SYSTEM Cooling REPORTED TO DW, DD.

To correct, suspend addition of Betz 430 for next two days and blow down towers to 300 ppm Calcium. When calcium reaches this level and time element is up then return to feeding 430 at a rate of 1 gallon per day total to each tower.

⑤ Results of bug counts taken on last visit indicate very good MB control as usual

⑥ We did full tower inspections and found water starved exchangers in the north section of A-Tower. Scaling is present on all exchangers and must be cleaned off to improve heat transfer. If you stay within control limits established for each makeup well, you should experience no more scaling. Please pass these limits on to everyone concerned and stress importance of holding proper calcium limits.

Well #1 → 500-600 ppm Ca max
Well #2 → 700-800 ppm Ca max
Well #3 → 1200-1500 ppm Ca max

⑦ Attached corrosion coupon analysis shows persistently high corrosion rates in A&B LOCW - Suggest trial usage of 562B for corrosion protection

SIGNED S. Justus/J. Herrold

ENG107 (FIVE PART) 7309

TOP F 0144109

PG20014258

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE Nov 14, 1980
ADDRESS Topock Compression Station, Needles, Calif CUST. NO.
SYSTEM Cooling REPORTED TO D. Davis, D. Wood

① Makeup H2O showing minor fluctuations in quality but holding around 90-100 ppm Calcium with only 40 ppm alkalinity

② Tower A + B showing trend of increasing calcium values toward upper range of control limits:

		Calcium	Calcium Control
Tower A	11-13-80	400	500 - 600 ppm
	11-14-80	500	"
Tower B	11-13-80	580	"
	11-14-80	600	"

Per the above results please increase blowdown on B Tower to prevent further cycling. On A tower please watch level very closely as you are showing rapid cycling of 100 ppm per 24 hours. Suggest increasing A tower blowdown slightly

③ Please restore 430 feed to B tower. You can cut addition until restored to full service but as long as heat load is present, 430 will be necessary. Records indicate no 430 feed since 11/6/80.

④ Microbiological samples taken today. Green algae visible in A tower. Suggest again that C-58 be fed at same pounds/day rate but only every other day, rather than 1/2 feed rate every day. Better chlorine residual values should result.

SIGNED Steve Justus

ENG107 (FIVE PARTS) 7800

TOP F 0-1-4-4-0-1

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY PACIFIC GAS + ELECTRIC DATE Nov 14, 1980
ADDRESS NEEDLES, CALIFORNIA CUST. NO.
SYSTEM COOLING REPORTED TO D. DAVIS, D. DAVIS

⑤ Recommended dosage of 562 B to the various closed system are as follows

A-Lube oil → 1½ gallons
BLC → 1½ gallons X
~~Aux~~ Jack → ½ gal.
Aux LO → 1 qt
PJW → 1 qt

JET adding 562-B in 11/17/80

This will give extremely good corrosion protection to copper or copper alloys and will react with the soluble copper in the water.

⑥ Attached you will find the latest coupon results with extremely good corrosion values in relation to most recent past. With the advent of the 562 program pull + replace coupons 2 days after chemical addition

SIGNED Steve Justus

ENG107 (FIVE PART) 7809

1

TOP F 0 1 4 4 0 2

PG20014241

PG20034316

WATER ANALYSIS REPORT

FOR PACIFIC GAS & ELECTRIC
Needles, CA.

SAMPLE DATED 1/28/81

BETZ
TREVOSE, PENNSYLVANIA 19047

DETERMINATION	SAMPLING POINT					
	Well 2					
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
pH	7.3					
Specific Conductance, micromhos, 25C	1338					
Specific Conductance, micromhos, 25C (at pH 8.3)						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0					
Methyl Orange Alkalinity as $CaCO_3$, ppm	112					
Sulfate and Sulfite as SO_4, ppm	103					
Chloride as Cl, ppm	333					
Total Hardness as $CaCO_3$, ppm	123					
Calcium as $CaCO_3$, ppm	96.6					
Magnesium as $CaCO_3$, ppm	25.2					
Silica as SiO_2, ppm	34.2					
Total Phosphate as PO_4, ppm	0.4					
Total Inorganic Phosphate as PO_4, ppm	0.2					
Ortho Phosphate as PO_4, ppm	0.2					
Chromate as CrO_4, ppm						
Chromium as Cr, ppm						
Total Copper as Cu, ppm	.46					
Total Iron as Fe, ppm	1.7					
Soluble Zinc as Z, ppm						
Sodium NA ppm	232					

ENG108 (Six-Part) 7715

TOP B6 1082 74

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE 3-6-81
ADDRESS TOPOCK, CALIFORNIA CUST. NO.
SYSTEM REPORTED TO DENNIS WOOD DICK DAVIS

Systems inspected and samples taken for full analysis. Follow up report will be sent next week.

Immediate action recommended at present time.

A Tower Increase 430 feed to 3/4 gal per day until construction is complete, then 1½ gpd.

B Tower Increase feed to 1½ gpd.

Also, CRO_4 and 562B do not mix, please wash between feeds.

ADD memo on ?

SIGNED
Thanks John Hensold

ENG107 (FIVE PART) 7809

TOP F 0 1 4 4 0 8

PG20034315

WATER ANALYSIS REPORT

FOR Pacific Gas & Electric
Topock Station
Needles, CA

SAMPLE DATED November 16, 1981

BETZ
TREVOSE PENNSYLVANIA 19047

DETERMINATION	SAMPLING POINT					
	Well 1	Well 2	Well 3			
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
pH	8.2	8.3	8.4			
Specific Conductance, micromhos, 25C	970	1567	2272			
Specific Conductance, micromhos 25C (at pH 8.8)						
Phenolphthalein Alkalinity as $CaCO_3$, ppm	0	0	1			
Methyl Orange Alkalinity as $CaCO_3$, ppm	101	87	88			
Sulfate and Sulfite as SO_4, ppm	110	143	162			
Chloride as Cl, ppm	259	563	843			
Total Hardness as $CaCO_3$, ppm	106	131	117			
Calcium as $CaCO_3$, ppm	84.1	110	109			
Magnesium as $CaCO_3$, ppm	21.7	20.6	6.2			
Silica as SiO_2, ppm	33.1	27.7	30.2			
Total Phosphate as PO_4, ppm	<0.4	<0.04	<0.04			
Total Inorganic Phosphate as PO_4, ppm	<0.2	<0.2	<0.2			
Ortho Phosphate as PO_4, ppm	<0.2	<0.2	<0.2			
Chromate as CrO_4, ppm						
Chromium as Cr, ppm						
Total Copper as Cu, ppm	0.05	0.05	0.05			
Total Iron as Fe, ppm	0.2	0.05	5.7			
Soluble Zinc as Z, ppm						
Sodium as Na, ppm	177	302	467			

ENG108 (Six Part) 7/11

TOP B6 1 0 8 2 7 3

BETZ WATER/ENERGY MANAGEMENT SERVICES

04 3 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 11/13/81 REPORT DATE 12/23/81 BETZ REPRESENTATIVE HERRGLO, J. J. 36N	LEGEND CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 20001	ACT 20002	AUXJW 20008	AUXLUB 20007	BCT 20003
PH	8.4 8.4 1	7.4 6.6 2	9.7 9.8 2	11.9 10.5 2	7.1 6.0 2
SPECIFIC CONDUCTIVITY, UMHOS	892 892 1	6550 6275. 2	2760 2780. 2	4200 2715. 2	13700 9850. 2
ALKALINITY, P, AS CACO3, PPM	0 0 1	0 0. 2	26 54. 2	520 266. 2	0 0. 2
ALKALINITY, M, AS CACO3, PPM	99 99 1	38 25. 2	266 318. 2	1124 660. 2	44 27. 2
SULFATE AND SULFITE, AS SO4, PPM	79 79 1	1020 1049. 2	182 140. 2	414 230. 2	1920 1544. 2
CHLORIDE, AS CL, PPM	211 211 1	1470 2477. 2	431 456. 2	500 324. 2	3250 2196. 2
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	116 116 1	70 670 1	6.2 6.2 1	3.5 3.5 1	1300 1300 1
TOTAL CALCIUM HARDNESS AS CACO3, PPM	92 92 1	554 554 1	3.6 3.6 1	1.5 1.5 1	1070 1070 1
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	23 23 1	112 112 1	2.6 2.6 1	2.0 2.0 1	222 222 1
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 1	L 0.05 0.03 2	0.[illegible] 0.4 2	2.9 1.48 2	L 0.05 0.18 2
TOTAL IRON, AS FE, PPM	0.1 0.1 1	0.4 1.2 2	2.8 1.9 2	2.1 1.08 2	1.0 1.7 2
SODIUM, AS NA, PPM	204 204 1	1290 1290 1	593 593 1	1370 1370 1	2600 2600 1
SOLUBLE ZINC, AS ZN, PPM		0.4 0.4 1			2.2 2.2 1
CHROMATE, AS CRO4, PPM		1.1 5.7 2	290.0 269.0 2	542.0 356.0 2	3.8 3.9 2
REDUCED CHROMIUM, AS CR, PPM		L 1.0 0.5 2	L 1.0 0.5 2	41 20. 2	L 1.0 0.5 2
PHOSPHATE, TOTAL, AS PO4, PPM	L 0.4 0.4 1	2.5 2.5 1			7.0 7.0 1
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L 0.2 0.2 1	1.9 1.9 1			2.0 2.0 1
PHOSPHATE, ORTHO-, AS PO4, PPM	L 0.2 0.2 1	1.3 1.3			2.0 2.0 1
SILICA, AS SIO2, PPM	32.4 32.4 1	174 17	21.5 21.5 1	40.7 40.7 1	245 245 1

ENG 3243 4/81

TOP B6 1083223

PG20034365

BETZ WATER & ENERGY MANAGEMENT SERVICES

0 .3 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 11/13/81 REPORT DATE 12/23/81 BETZ REPRESENTATIVE HERROLD, J. J. 36[illegible]	LEGEND CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF TREATMENT RESULTS

	SAMPLING POINT				
	LUBOLA 20004	LUBOLB 20005	MAINON 20005		
PH	8.2 8.2 1	9.9 9.9 1	9.8 9.7 2		
SPECIFIC CONDUCTIVITY, UMHOS	* * 1	3060 3060 1	2500 2344. 2		
ALKALINITY, P, AS CACO3, PPM	* * 1	62 62 1	36 38. 2		
ALKALINITY, M, AS CACO3, PPM	* * 1	422 422 1	347 287. 2		
SULFATE AND SULFITE, AS SO4, PPM	* * 1	258 258 1	189 119. 2		
CHLORIDE, AS CL, PPM	* * 1	749 749 1	491 330. 2		
TO[illegible] HARDNESS, SUM OF IO[illegible], AS CACO3, PPM	* * 1	23.1 23.1 1	5.1 5.1 1		
TOTAL CALCIUM HARDNESS, AS CACO3, PPM	* * 1	20.1 20.1 1	4.3 4.3 1		
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	* * 1	2.8 2.8 1	0.8 0.8 1		
TOTAL COPPER, AS CU, PPM	* * 1	L 0.05 0.05 1	0.1 0.4 2		
TOTAL IRON, AS FE, PPM	* * 1	0.1 0.1 1	2.1 3.9 2		
SODIUM, AS NA, PPM	* * 1	913 913 1	645 645 1		
CHROMATE, AS CRO4, PPM	* * 1	340.0 348.0 1	290.0 222.0 2		
REDUCED CHROMIUM, AS CR, PPM	* * 1	L 1.0 1.0 1	4.5 2.3 2		
SILICA, AS SIO2, PPM		36.7 36.7 1	19.0 19.0 1		
FILTERED SILICA, AS SIO2 PPM	65.0 65.0 1				

TOP B6 1 0 8 3 2 4

PG20034366

BETZ WATER/ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 12/18/82 REPORT DATE 1/27/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS: XXXX MEDIAN: XXXX XX (NUMBER OF REPORTING RESULTS)

	SAMPLING POINT				
	MAKEUP 08007	ACT 08008	AUXJW 08009	AUXLUB 08010	BCT 08011
PH	8.3 8.4 2	7.7 7.4 3	8.8 9.7 3	11.3 11.3 3	6.1 6.1 3
SPECIFIC CONDUCTIVITY, UMHOS	1570 1231. 2	7530 6550 3	2330 2760 3	4870 4200 3	14680 13700 3
ALKALINITY, P, AS CACO3, PPM	0 0. 2	0 0 3	5 26 3	330 330 3	0 0 3
ALKALINITY, M, AS CACO3, PPM	85 92. 2	32 32 3	267 267 3	980 980 3	20 20 3
SULFATE AND SULFITE, AS SO4, PPM	104 91. 2	795 1020 3	125 125 3	255 255 3	1590 1590 3
CHLORIDE, AS CL, PPM	382 296. 2	1560 1560 3	400 431 3	370 370 3	3640 3250 3
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	114 115. 2	568 619. 2	6.7 6.5 2	1.8 2.7 2	1160 1230. 2
TOTAL CALCIUM HARDNESS AS CACO3, PPM	94.3 93.2 2	473 513. 2	6.1 4.9 2	1.8 1.7 2	970 1020. 2
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	16.6 20.8 2	91.1 101.6 2	0.7 1.7 2	L 2.0 2.0 2	185 203. 2
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 2	L 0.05 0.05 3	0.4 0.4 3	1.7 1.7 3	0.1 0.1 3
TOTAL IRON, AS FE, PPM	L 0.05 0.08 2	0.8 0.8 3	2.5 2.5 3	1.1 1.1 3	0.7 1.0 3
SODIUM, AS NA, PPM	207 205. 2	1120 1205. 2	427 510. 2	1040 1205. 2	2860 2730. 2
SOLUBLE ZINC, AS ZN, PPM		2.5 1.5 2			3.0 2.6 2
CHROMATE, AS CRO4, PPM		23.2 10.2 3	294.0 290.0 3	944 542.0 3	7.1 4. 3
REDUCED CHROMIUM, AS CR, PPM		L 1.0 1.0 3	16.0 1.0 3	14.0 14.0 3	L 1.0 1.0 3
PHOSPHATE, TOTAL, AS PO4, PPM	L 0.4 0.4 2	2.5 2.5 2			1.5 4.3 2
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L 0.2 0.2 2	0.5 1.2 2			1.4 1.7 2
PHOSPHATE, ORTHO-, AS PO4, PPM	L 0.2 0.2 2	0.5 0.9 2			1.4 1.7 2
SILICA, AS SIO2, PPM	28.1 30.3 2	132 154. 2	21.2 21.4 2	31.7 36.2 2	214 230. 2

BHG 324A 8108

TOP F

POOR QUALITY ORIGINAL

PG20014279

BETZ WATER ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT	DATE SAMPLED 12/18/82 REPORT DATE 1/27/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND AUTOMATIC TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 08007	ACT 08008	AUXJW 08009	AUXLUB 0801D	OCT 08011
TOTAL ZINC, AS ZN, PPM		2.5 2.5 1			3.0 3.0 1

ENG 324A 8100

TOP F

0 1 9 7 7 0 7 0 7

POOR QUALITY ORIGINAL

PG20019223

ENERGY MANAGEMENT SERVICES

43 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 12/18/82 REPORT DATE 1/27/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBOLA 08012	LUBOLB 08013	MAINJW 08014		
PH	7.7 8.0 2	9.5 9.7 2	9.3 9.6 3		
SPECIFIC CONDUCTIVITY, UMHOS	5800 2946. 2	3220 3140. 2	2520 2500 3		
ALKALINITY, P, AS CACO3, PPM		35 48. 2	18 36 3		
ALKALINITY, M, AS CACO3, PPM		406 414. 2	300 300 3		
SULFATE AND SULFITE, AS SO4, PPM		110 184. 2	90 90 3		
CHLORIDE, AS CL, PPM		410 579. 2	365 365 3		
TOTAL HARDNESS, SUM OF 1 S, AS CACO3, PPM	16.6 6.3 2	4.1 13.6 2	5.4 5.3 2		
TOTAL CALCIUM HARDNESS AS CACO3, PPM	15.4 5.7 2	3.8 12.0 2	4.3 4.3 2		
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	0.7 5.4 2	0.3 1.6 2	1.1 1.0 2		
TOTAL COPPER, AS CU, PPM	0.07 6.04 2	L 0.05 0.05 2	L 0.5 0.5 3		
TOTAL IRON, AS FE, PPM	0.1 6.1 2	0.5 0.3 2	1.4 2.1 3		
SODIUM, AS NA, PPM	383 197. 2	489 701. 2	536 590. 2		
CHROMATE, AS CRO4, PPM		51.5 199.8 2	280 280 3		
REDUCED CHROMIUM, AS CR, PPM		102 51.5 2	19.0 4.5 3		
SILICA, AS SIO2, PPM		39.0 37.9 2	20.6 19.8 2		

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BETZ ENERGY

1143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 1/19/82 REPORT DATE 2/11/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND MEDIAN XXX.X / XXX.X XX

	SAMPLING POINT				
	ACT 01089	AUXJW 01090	AUXLUB 01091	ECT 01092	LUBOLA 01093
PH	8.1 7.6 4	9.1 5.4 4	10.7 11.0 4	6.8 6.5 4	9.4 8.2
SPECIFIC CONDUCTIVITY, UMHOS	7040 6795. 4	1950 2545. 4	2400 3300. 4	12700 13200. 4	6100 5880
ALKALINITY, P, AS CACO3, PPM	0 0. 4	13 19. 4	195 262. 4	0 0. 4	
ALKALINITY, M, AS CACO3, PPM	45 35. 4	320 293. 4	692 836. 4	26 23. 4	
SULFATE AND SULFITE, AS SO4, PPM	850 935. 4	222 133. 4	216 235. 4	1665 1627. 4	175 85.
CHLORIDE, AS CL, PPM	1660 1610. 4	450 440. 4	415 392. 4	3360 3305. 4	1650 0.
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	553 568 3	6.6 6.6 3	4.2 3.5 3	1350 1300 3	47.9 16.6
TOTAL CALCIUM HARDNESS AS CACO3, PPM	454 473 3	6.3 6.1 3	4.2 1.8 3	1130 1070 3	39.9 15.4
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	94.5 94.5 3	L 1.0 1.0 3	L 1.0 2.0 3	210 210 3	3.5 0.7
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 4	1.0 0.5 4	0.6 1.2 4	L 0.5 0.2 4	1.6 0.07
TOTAL IRON, AS FE, PPM	0.4 0.6 4	4.4 2.7 4	L 0.5 0.8 4	2.7 1.7 4	1.0 0.1
SODIUM, AS NA, PPM	1300 1290 3	538 538 3	768 1040 3	2470 2600 3	1390 383
SOLUBLE ZINC, AS ZN, PPM	0.7 0.7 3			3.2 3.0 3	
CHROMATE, AS CRO4, PPM	5.0 7.6 4	425 292.0 4	581 561.5 4	14.6 5.6 4	657.9 327.0
REDUCED CHROMIUM, AS CR, PPM	L 1.0 1.0 4	L 1.0 1.0 4	18.9 16.5 4	L 1.0 1.0 4	23.0 17.5
PHOSPHATE, TOTAL, AS PO4, PPM	2.0 2.5 3			5.8 5.8 3	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	1.0 1.0 3			1.1 1.4 3	
PHOSPHATE, ORTHO-, AS PO4, PPM	0.8 0.8 3			1.1 1.4 3	
SILICA, AS SIO2, PPM	119 132 3	21.8 21.5 3	24.0 31.7 3	177 214 3	61.6 61.6

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SENERGY MANAGEMENT SERVICES

.143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 1/19/82 REPORT DATE 2/11/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAINJW 01094				
PH	9.8 9.7 4				
SPECIFIC CONDUCTIVITY, UMHOS	1950 2344. 4				
ALKALINITY, P, AS CACO3, PPM	34 35. 4				
ALKALINITY, M, AS CACO3, PPM	309 304. 4				
SULFATE AND SULFITE, AS SO4, PPM	201 130. 4				
CHLORIDE, AS CL, PPM	443 404. 4				
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	4.0 5.1 3				
TOTAL CALCIUM HARDNESS AS CACO3, PPM	3.7 4.3 3				
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	0.3 0.8 3				
TOTAL COPPER, AS CU, PPM	0.08 0.3 4				
TOTAL IRON, AS FE, PPM	1.1 1.8 4				
SODIUM, AS NA, PPM	564 564 3				
SILICA, AS SIO2, PPM	20.2 20.2 3				

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ENERGY

.143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 1/20/82 REPORT DATE 2/11/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND XXX.X MEDIAN XXX X XX

	SAMPLING POINT				
	LUBOLB 01096				
PH	9.2 9.5 3				
SPECIFIC CONDUCTIVITY, UMHOS	2420 3060 3				
ALKALINITY, P, AS CACO3, PPM	23 35 3				
ALKALINITY, M, AS CACO3, PPM	406 406 3				
SULFATE AND SULFITE, AS SO4, PPM	222 222 3				
CHLORIDE, AS CL, PPM	600 600 3				
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	24.6 23.1 3				
TOTAL CALCIUM HARDNESS AS CACO3, PPM	22.7 20.1 3				
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	1.4 1.4 3				
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 3				
TOTAL IRON, AS FE, PPM	0.08 0.1 3				
SODIUM, AS NA, PPM	648 648 3				
CHROMATE, AS CRO4, PPM	425 348.0 3				
REDUCED CHROMIUM, AS CR, PPM	1.0 1.0 3				
SILICA, AS SIO2, PPM	37.2 37.2 3				

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ENERGY MANAGEMENT SERVICES

143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 1/20/82 REPORT DATE 2/11/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 01095				
PH	8.4 8.4 3				
SPECIFIC CONDUCTIVITY, UMHOS	1520 1520 3				
ALKALINITY, P, AS CACO3, PPM	1 0 3				
ALKALINITY, M, AS CACO3, PPM	85 85 3				
SULFATE AND SULFITE, AS SO4, PPM	152 104 3				
CHLORIDE, AS CL, PPM	446 382 3				
T[illegible]L HARDNESS, SUM OF IONS, AS CACO3, PPM	123 116 3				
TOTAL CALCIUM HARDNESS AS CACO3, PPM	99.9 94.3 3				
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	21.9 21.9 3				
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 3				
TOTAL IRON, AS FE, PPM	0.1 0.1 3				
SODIUM, AS NA, PPM	259 207 3				
PHOSPHATE, TOTAL, AS PO4, PPM	L 0.4 0.4 3				
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L 0.2 0.2 3				
PHOSPHATE, ORTHO-, AS PO4, PPM	L 0.2 0.2 3				
SILICA, AS SIO2, PPM	28.3 28.3 3				

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BETZ WATER & ENERGY MANAGEMENT SERVICES

143 .CIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 3/10/82 REPORT DATE 4/13/82 BETZ REPRESENTIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 23051	ACT 23052	AUXJW 23053	AUXLUB 23054	BCT 23055
PH	8.5 8.4 4	7.9 7.7 5	8.9 9.1 5	9.1 10.7 5	6.5 6.5 5
SPECIFIC CONDUCTIVITY, UMHOS	1470 1495. 4	7490 7040 5	2820 2760 5	3270 3270 5	11500 12700 5
ALKALINITY, P, AS CACO3, PPM	2 0. 4	0 0 5	11 13 5	32 195 5	0 0 5
ALKALINITY, M, AS CACO3, PPM	86 85. 4	44 38 5	372 320 5	716 716 5	23 23 5
SULFATE AND SULFITE, AS SO4, PPM	106 105. 4	915 915 5	258 182 5	233 233 5	1390 1590 5
CHLORIDE, AS CL, PPM	388 385. 4	1940 1660 5	490 450 5	449 415 5	2920 3250 5
TOTAL HARDNESS, SUM OF [illegible]S, AS CACO3, PPM	116 116. 4	580 574. 4	4.4 6.4 4	22.3 3.9 4	552 1230. 4
TOTAL CALCIUM HARDNESS AS CACO3, PPM	94.4 94.4 4	472 472. 4	4.4 5.3 4	22.3 3.0 4	404 1020. 4
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	20.8 21.4 4	104 99.3 4	L 1.0 1.0 4	L 1.0 1.5 4	144 197. 4
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 4	L 0.05 0.05 5	0.5 0.5 5	0.3 0.6 5	0.07 0.1 5
TOTAL IRON, AS FE, PPM	0.06 0.08 4	0.2 0.4 5	2.0 2.5 5	0.2 0.5 5	0.9 1.0 5
SODIUM, AS NA, PPM	253 230. 4	1480 1295. 4	629 565. 4	422 904. 4	1810 2535. 4
SOLUBLE ZINC, AS ZN, PPM		0.5 0.6 4			4.2 3.1 4
CHROMATE, AS CRO4, PPM		9.6 9.6 5	195 290.0 5	271 542.0 5	24.8 7.1 5
REDUCED CHROMIUM, AS CR, PPM		L 1.0 1.0 5	134 1.0 5	102 18.9 5	L 1.0 1.0 5
PHOSPHATE, TOTAL, AS PO4, PPM	L 0.4 0.4 4				4.5 5.2 4
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L 0.2 0.2 4				0.9 1.3 4
SILICA, AS SIO2, PPM	24.6 28.2 4	119 125. 4	18.7 21.4 4	17.5 27.9 4	156 195. 4
PHOSPHATE, ORTHO-, AS PO4, PPM	L 0.2 0.2 4				0.9 1.3 4

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BETZ WATER/ENERGY MANAGEMENT SERVICES

143 ..CIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 3/10/82 REPORT DATE 4/13/82 BETZ REPRESENTIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBOLA 23056	LUBOLB 23057	MAINJW 23058		
PH	8.7 8.5 4	8.8 9.4 4	9.9 9.8 5		
SPECIFIC CONDUCTIVITY, UMHOS	5510 5695. 4	2630 2845. 4	2600 2500 5		
ALKALINITY, P, AS CACO3, PPM	46 21. 2	10 29. 4	36 36 5		
ALKALINITY, M, AS CACO3, PPM	870 0. 2	319 406. 4	332 309 5		
SULFATE AND SULFITE, AS SO4, PPM	575 175 3	178 200. 4	203 189 5		
CHLORIDE, AS CL, PPM	1020 1020 3	562 581. 4	484 443 5		
T[illegible]AL HARDNESS, SUM OF [illegible]S, AS CACO3, PPM	35.1 25.9 4	23.1 23.1 4	6.1 5.3 4		
TOTAL CALCIUM HARDNESS AS CACO3, PPM	35.1 25.3 4	20.9 20.5 4	5.0 4.3 4		
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	L 1.0 0.9 4	1.8 1.6 4	1.1 1.0 4		
TOTAL COPPER, AS CU, PPM	L 0.5 0.29 4	L 0.05 0.05 4	0.2 0.2 5		
TOTAL IRON, AS FE, PPM	L 0.5 0.3 4	0.09 0.10 4	3.5 2.1 5		
SODIUM, AS NA, PPM	1310 846. 4	606 627. 4	588 576. 4		
CHROMATE, AS CRO4, PPM	121 121 3	157 252.5 4			
REDUCED CHROMIUM, AS CR, PPM	66.7 23.0 3	215 51.5 4			
SILICA, AS SIO2, PPM	51.9 56.8 2	30.9 37.0 4	17.1 19.6 4		

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BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas and Electric DATE 4-7-82
ADDRESS Topock, California CUST. NO.
SYSTEM REPORTED TO D. Wood D. Davis K. Ridings

All systems were inspected and samples were taken for analysis at our laboratory. The results will be reported as soon as possible.
The water distribution at the north end of tower B needs to be improved as soon as you can get it in the work schedule. There is very little water going over the tube bundles at that end.

Tower cooling water control limits when on well #2
Silica 28ppm x 7 cycles = 196 ppm silica (we do not want to exceed 200ppm)
Ca 110ppm x 7 cycles = 770 ppm
Please do not exceed 770 calcium ppm as a control limit, and you should remain in the 700ppm to 770 ppm range to insure you don't exceed the silica max

In march I wrote a procedure for making dilutions to run hardness tests on the high level chromate water in the closed systems. This is difficult to run and I would suggest that you test the softener effluents at least twice a week to insure you are making up with low hardness water.

Chemical Inventory.

(3) drums	430	(1) 562C
(1)	C-30	(1) 409
(1)	X5	(1) Y7
(1)	45 chrome	

SIGNED Thanks John Henrick

ENG101 (FIVE PART) 7800

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TOP F 0 1 4 4 4 7

POOR QUALITY ORIGINAL

PG20014286

BETZ WATER/ENERGY MANAGEMENT SERVICES

143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 4/07/82 REPORT DATE 5/25/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND XXX.X MEDIAN XXX.X XX

	SAMPLING POINT				
	MAKEUP 19039	ACT 19040	AUXJW 19041	AUXLUB 19042	BCT 19043
PH	8.3 8.4 5	8.1 7.9 5	8.8 8.9 5	8.7 10.7 5	7.0 6.8
SPECIFIC CONDUCTIVITY, UMHOS	1590 1520 5	9000 7490 5	3060 2760 5	3500 3500 5	10400 12700
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2990 2990 1	3470 3470 1	
ALKALINITY, P, AS CACO3, PPM	0 0 5	0 0 5	9 11 5	13 195 5	0 0
ALKALINITY, M, AS CACO3, PPM	88 86 5	102 44 5	429 320 5	738 738 5	34 26
SULFATE AND SULFITE, AS SO4, PPM	121 106 5	1090 915 5	259 222 5	217 233 5	1320 1590
CHLORIDE, AS CL, PPM	338 382 5	2460 1660 5	431 431 5	457 449 5	2820 3250
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	118 116 5	656 580 5	8.2 6.6 5	44.3 4.2 5	756 1160
TOTAL CALCIUM HARDNESS AS CACO3, PPM	96.9 94.4 5	539 473 5	7.0 6.1 5	37.0 4.2 5	620 970
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	19.8 20.8 5	113 104 5	1.2 1.0 5	7.1 2.0 5	131 185
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 5	L 0.05 0.05 5	0.4 0.5 5	0.2 0.6 5	0.06 0.07
TOTAL IRON, AS FE, PPM	0.1 0.1 5	0.4 0.4 5	2.1 2.5 5	0.1 0.5 5	0.8 0.9
SODIUM, AS NA, PPM	261 253 5	1460 1300 5	532 538 5	790 790 5	1700 2470
PHOSPHATE, TOTAL, AS PO4, PPM	L 0.4 0.4 5				
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L 0.2 0.2 5				
PHOSPHATE, ORTHO-, AS PO4, PPM	L 0.2 0.2 5				
SILICA, AS SIO2, PPM	28.6 28.3 5	155 132 5	21.9 21.5 5	27.2 27.2 5	190 190

ENG 334 A 8105 ENGINEERING SERVICES

TOP F

POOR QUALITY ORIGINAL

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BETZ WATER/ENERGY MANAGEMENT SERVICES

W&B TFH

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92367	DATE SAMPLED 4/07/82 REPORT DATE 5/25/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBOLA 19044				
PH	8.2 8.2 5				
SPECIFIC CONDUCTIVITY, UMHOS	5180 5510 5				
ALKALINITY, P, AS CACO3, PPM	0 0 3				
ALKALINITY, M, AS CACO3, PPM	868 868 3				
SULFATE AND SULFITE, AS SO4, PPM	112 143. 4				
CHLORIDE, AS CL, PPM	227 623. 4				
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	45.4 35.1 5				
TOTAL CALCIUM HARDNESS AS CACO3, PPM	40.9 35.1 5				
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	3.4 1.0 5				
TOTAL COPPER, AS CU, PPM	0.2 0.2 5				
TOTAL IRON, AS FE, PPM	0.2 0.2 5				
SODIUM, AS NA, PPM	1200 1200 5				
SILICA, AS SIO2, PPM	67.1 61.6 3				

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ENGINEERING SERVICES

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POOR QUALITY ORIGINAL

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BETZ WATER & ENERGY MANAGEMENT SERVICES

0 743 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 4/07/82 REPORT DATE 5/20/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF INDIVIDUAL SAMPLES

	SAMPLING POINT				
	MAINJW 19046				
PH	9.2 9.8 5				
SPECIFIC CONDUCTIVITY, UMHOS	2660 2520 5				
ALKALINITY, P, AS CACO3, PPM	15 34 5				
ALKALINITY, M, AS CACO3, PPM	328 328 5				
SULFATE AND SULFITE, AS SO4, PPM	221 201 5				
CHLORIDE, AS CL, PPM	460 460 5				
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	5.1 5.1 5				
TOTAL CALCIUM HARDNESS AS CACO3, PPM	4.5 4.3 5				
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	0.6 0.8 5				
TOTAL COPPER, AS CU, PPM	0.07 0.1 5				
TOTAL IRON, AS FE, PPM	1.1 1.4 5				
SODIUM, AS NA, PPM	554 564 5				
SILICA, AS SIO2, PPM	24.3 20.2 5				

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

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04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 5/14/82 REPORT DATE 6/14/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 24059	ACT 24066	AUXJW 24064	AUXLUB 24065	BCT 2406
PH	8.4 8.4 5	6.7 7.9 5	8.7 8.8 5	8.5 9.1 5	4.6 6.5
SPECIFIC CONDUCTIVITY, UMHOS	1542 1542 5	11100 7530 5	2707 2707 5	2139 3270 5	5396 11500
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	1525 1525 1		2707 2848. 2	2119 2794. 2	
ALKALINITY, P, AS CACO3, PPM	1 1 5	0 0 5	6 9 5	4 32 5	0 0
ALKALINITY, M, AS CACO3, PPM	83 85 5	30 44 5	364 364 5	500 716 5	0 23
SULFATE AND SULFITE, AS SO4, PPM	99. 106 5	1225. 915 5	242. 242. 5	155. 217 5	1280. 1390
CHLORIDE, AS CL, PPM	396. 388 5	2495. 1940 5	454. 450 5	435. 435. 5	2005 2920
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	109. 116 5	732. 580 5	5.8 6.6 5	39.6 22.3 5	663. 756
TOTAL CALCIUM HARDNESS AS CACO3, PPM	87.8 94.4 5	596. 473 5	5.2 6.1 5	32.6 22.3 5	545. 620
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	19.9 19.9 5	130. 104 5	0.6 1.0 5	6.7 2.0 5	112. 144
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 5	L 0.1 0.05 5	0.2 0.4 5	0.2 0.3 5	0.3 0.1
TOTAL IRON, AS FE, PPM	L 0.05 0.06 5	1.9 0.4 5	1.4 2.1 5	L 0.1 0.2 5	3.0 0.9
SODIUM, AS NA, PPM	279. 259 5	1750. 1460 5	635. 538 5	640. 768 5	1400. 1810
SOLUBLE ZINC, AS ZN, PPM		4.0 1.6 4			10.6 3.7
CHROMATE, AS CRO4, PPM		31.0 16.4 4	442. 359.5 4	281. 431. 4	3.9 10.9
REDUCED CHROMIUM, AS CR, PPM		L 1.0 1.0 4	15.7 15.9 4	125. 60.5 4	1.0 1.0
PHOSPHATE, TOTAL, AS PO4, PPM	L 0.4 0.4 5				
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L 0.2 0.2 5				
PHOSPHATE, ORTHO-, AS PO4, PPM	L 0.2 0.2 5				

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BETZ WATER & ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT	DATE SAMPLED 5/14/82 REPORT DATE 6/14/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 24059	ACT 24066	AUXJW 24064	AUXLUB 24065	BCT 24061
SILICA, AS SIO2, PPM	64.2 28.3 5	152. 132 5	22.5 21.8 5	27.4 27.2 5	146. 177 5

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BETZ WATER & ENERGY MANAGEMENT SERVICES

w143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 5/14/82 REPORT DATE 6/14/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBOLA 24062	LUBOLB 24063	MAINJW 24060		
PH	8.4 8.4 5	8.1 9.2 5	9.3 9.3 5		
SPECIFIC CONDUCTIVITY, UMHOS	3047 5910 5	2420 2630 5	2348 2520 5		
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	3066 3066 1		2283 2283 1		
ALKALINITY, P, AS CACO3, PPM	2 2 3	0 23 5	22 22 5		
ALKALINITY, M, AS CACO3, PPM	360 868 3	220 406 5	282 309 5		
SULFATE AND SULFITE, AS SO4, PPM	253. 214. 4	190. 190. 5	180. 201 5		
CHLORIDE, AS CL, PPM	705. 862. 4	578. 578. 5	462. 460 5		
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	29.2 35.1 5	40.7 23.1 5	7.1 5.4 5		
TOTAL CALCIUM HARDNESS AS CACO3, PPM	25.4 35.1 5	34.6 20.9 5	5.9 4.5 5		
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	3.1 3.1 5	5.7 1.8 5	1.2 1.1 5		
TOTAL COPPER, AS CU, PPM	0.1 0.2 5	L 0.1 0.05 5	0.3 0.2 5		
TOTAL IRON, AS FE, PPM	L 0.1 0.2 5	0.2 0.1 5	3.2 1.4 5		
SODIUM, AS NA, PPM	697. 1200 5	525. 606 5	530. 554 5		
CHROMATE, AS CRO4, PPM	251. 251. 3	212. 212. 5	283.0 281.5 2		
REDUCED CHROMIUM, AS CR, PPM	15.7 23.0 3	L 1.0 1.0 5	L 1.0 9.5 2		
SILICA, AS SIO2, PPM	45.1 56.8 4	40.5 37.2 5	22.7 20.6 5		

ENG 324A 8105

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

143 [illegible]CIFIC [illegible] & ELEC. [illegible] STAT [illegible] S, [illegible] 92363	DATE SAMPLED 6/21/92 REPORT DATE 6/03/92 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXX X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 07084	ACT 07088	AUXJW 07085	AUXLUB 07090	BCT 07091
PH	8.5 8.4 5	8.0 7.9 5	9.2 8.8 5	8.5 8.7 5	6.8 6.5 5
SPECIFIC CONDUCTIVITY, UMHOS	1503 1542 5	8100 8100 5	2699 2707 5	2475 3270 5	5365 10400 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	1495 1510. 2		2676 2707 3	2459 2459 3	
ALKALINITY, P, AS CACO3, PPM	3 1 5	0 0 5	17 9 5	5 13 5	0 0 5
ALKALINITY, M, AS CACO3, PPM	83 85 5	82 44 5	365 365 5	420 716 5	21 21 5
SULFATE AND SULFITE, AS SO4, PPM	102. 104 5	1180. 1090 5	245. 245. 5	151. 217 5	855. 1320 5
CHLORIDE, AS CL, PPM	417. 388 5	2760. 2460 5	482. 454. 5	482. 449 5	1910 2820 5
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	112. 114 5	822. 656 5	5.9 5.9 5	38.3 38.3 5	575. 663. 5
TOTAL CALCIUM HARDNESS AS CACO3, PPM	93.2 94.3 5	683. 539 5	5.0 5.2 5	31.9 31.9 5	477. 545. 5
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	18.4 19.8 5	134. 113 5	0.9 0.9 5	6.2 6.2 5	94.4 131 5
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 5	L 0.05 0.05 5	0.2 0.4 5	0.09 0.2 5	L 0.05 0.07 5
TOTAL IRON, AS FE, PPM	L 0.05 0.05 5	0.3 0.4 5	0.9 2.0 5	0.09 0.1 5	1.1 0.9 5
SODIUM, AS NA, PPM	255. 255. 5	2040. 1480 5	583. 583. 5	570. 640. 5	1360. 1700 5
PHOSPHATE, TOTAL, AS PO4, PPM	L 0.4 0.4 5	2.5 2.5 2			4.4 4.4 3
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L 0.2 0.2 5	0.8 0.7 2			0.5 0.9 3
PHOSPHATE, ORTHO-, AS PO4, PPM	L 0.2 0.2 5	0.8 0.7 2			0.5 0.9 3
SILICA, AS SIO2, PPM	21.5 20.1 5	157. 152. 5	18.7 21.2 5	18.5 27.2 5	117. 156 5

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BETZ WATER & ENERGY MANAGEMENT SERVICES

5143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 6/21/82 REPORT DATE 6/03/82 BETZ REPRESENTATIVE HERSOLD, J. J. 36N	LEGEND CURRENT REPORT RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBDLA 07036	LUBCLG 07087	MAINJW 07089		
PH	8.6 8.4 5	8.6 8.8 5	8.7 9.3 5		
SPECIFIC CONDUCTIVITY, UMHOS	2564 5180 5	2549 2549 5	2520 2520 5		
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	2544 2805. 2	2514 2514 1	2483 2383. 2		
ALKALINITY, P, AS CACO3, PPM	4 3. 4	4 10 5	5 18 5		
ALKALINITY, M, AS CACO3, PPM	270 614. 4	245 319 5	314 314 5		
SULFATE AND SULFITE, AS SO4, PPM	248. 250. 4	185. 185. 5	229. 203 5		
CHLORIDE, AS CL, PPM	706. 705. 4	617. 578. 5	556. 462. 5		
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	78.8 35.1 5	55.8 24.6 5	9.2 6.1 5		
TOTAL CALCIUM HARDNESS AS CACO3, PPM	67.2 35.1 5	48.4 22.7 5	7.7 5.0 5		
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	11.0 3.1 5	7.0 1.8 5	1.4 1.1 5		
TOTAL COPPER, AS CU, PPM	L 0.05 0.1 5	L 0.05 0.05 5	L 0.05 0.2 5		
TOTAL IRON, AS FE, PPM	0.2 0.2 5	0.09 0.09 5	0.8 1.4 5		
SODIUM, AS NA, PPM	644. 697. 5	537. 537. 5	573. 554 5		
SILICA, AS SIO2, PPM	42.4 48.5 4	37.8 37.8 5	18.3 20.6 5		

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BETZ WATER & ENERGY MANAGEMENT SERVICES

[illegible] PACIFIC GAS & ELEC. TRACK COMP STA [illegible], CA 92163	DATE SAMPLED [illegible] REPORT DATE [illegible] BETZ REPRESENTATIVE [illegible], J. J. 364	LEGEND: CURRENT MONTH'S RESULTS XXX.X; MEDIAN XXX.X XX NUMBER OF MEASUREMENTS

	SAMPLING POINT				
	[illegible] 08C75	ACT 08C75	AUXJW 08C70	AUXLUP 08C72	JCT 08C76
PH	7.6 8.3 5	4.1 7.7 5	8.3 8.8 5	7.4 8.5 5	6.6 6.6 5
SPECIFIC CONDUCTIVITY, UMHOS	1430 1542 5	[illegible] 9000 5	2710 2707 5	2360 2475 5	10950 10400 5
ALKALINITY, P, AS CACO3, PPM	0 0 5	0 0 5	0 6 5	0 5 5	0 0 5
ALKALINITY, M, AS CACO3, PPM	95 85 5	14 32 5	382 365 5	325 500 5	14 20 5
SULFATE AND SULFITE, AS SO4, PPM	[illegible] 102. 5	1250 1180. 5	268 245. 5	146 155. 5	1470 1320 5
CHLORIDE, AS CL, PPM	302 302 5	2495 2495 5		356 435. 5	3075 2820 5
TOTAL HARDNESS, SUM OF CATIONS, AS CACO3, PPM	115. 114 5	692. 692. 5	6.0 6.0 5	23.0 38.3 5	805. 756 5
TOTAL CALCIUM HARDNESS, AS CACO3, PPM	94.4 94.3 5	571. 571. 5	6.0 6.0 5	19.2 31.9 5	655. 620 5
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	19.5 19.5 5	115. 115. 5	L 0.1 0.7 5	3.6 6.2 5	144. 131 5
TOTAL COPPER, AS CU, PPM	L 0.05 0.05 5	0.06 0.05 5	L 0.1 0.2 5	0.4 0.2 5	0.08 0.08 5
TOTAL IRON, AS FE, PPM	L 0.05 0.05 5	1.1 0.8 5	0.4 1.4 5	L 0.1 0.1 5	2.3 1.1 5
SODIUM, AS NA, PPM	300. 271 5	1750. 1750. 5	686. 583. 5	580. 640. 5	2350. 1700 5
PHOSPHATE, TOTAL, AS PO4, PPM	L 0.4 0.4 5	4.6 2.5 3			12.5 4.4 3
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L 0.2 0.2 5	1.0 0.8 3			1.6 1.4 3
PHOSPHATE, ORTHO-, AS PO4, PPM	L 0.2 0.2 5	1.0 0.8 3			1.6 1.4 3
SILICA, AS SIO2, PPM	26.4 28.1 5	169. 155 5	17.3 21.2 5	24.5 27.2 5	180. 180. 5

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BETZ WATER & ENERGY MANAGEMENT SERVICES

[illegible] PACIFIC [illegible] & [illegible] [illegible] COND STAT [illegible] CA 92363	DATE SAMPLED 7/13/82 REPORT DATE 10/22/82 BETZ REPRESENTATIVE [illegible], J. J. 36K	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX PRIMARY OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBCLA 08073	LUBCLA 08074	MAINJW 08071		
PH	8.3 8.3 5	7.6 8.6 5	8.6 9.2 5		
SPECIFIC CONDUCTIVITY, UMHOS	2796 3047 5	2170 2543 5	2380 2520 5		
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2370 2370 3		
ALKALINITY, P, AS CACO3, PPM	0 1. 4	0 4 5	11 15 5		
ALKALINITY, M, AS CACO3, PPM	233 315. 4	193 245 5	313 313 5		
SULFATE AND SULFITE, AS SO4, PPM	211 229. 4	174 178 5	206 206 5		
CHLORIDE, AS CL, PPM	527 616. 4	467 562 5			
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	53.0 45.4 5	44.8 40.7 5	8.8 7.1 5		
TOTAL CALCIUM HARDNESS, AS CACO3, PPM	50.0 40.9 5	38.8 34.6 5	7.6 5.9 5		
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	7.4 3.4 5	5.6 5.6 5	1.0 1.1 5		
TOTAL COPPER, AS CU, PPM	L 0.1 0.1 5	L 0.1 0.05 5	L 0.1 0.1 5		
TOTAL IRON, AS FE, PPM	L 0.1 0.1 5	L 0.1 0.1 5	1.2 1.2 5		
SODIUM, AS NA, PPM	636. 644. 5	642. 537. 5	650. 554 5		
SILICA, AS SIO2, PPM	36.3 43.3 4	34.3 37.8 5	19.2 20.6 5		

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

[illegible] PACIFIC [illegible] & ELEC. TOPOCK [illegible] STAT [illegible] CA 92363	DATE SAMPLED 7/13/82 REPORT DATE 10/22/82 BETZ REPRESENTATIVE [illegible], J. J. 36A	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBOLA 08073	LUBOLA 08074	MAINJW 08071		
PH	8.3 8.3 5	7.6 8.6 5	8.6 9.2 5		
SPECIFIC CONDUCTIVITY, UMHOS	2796 3047 5	2170 2549 5	2380 2520 5		
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2370 2370 3		
ALKALINITY, P, AS CACO3, PPM	0 1. 4	0 4 5	11 15 5		
ALKALINITY, M, AS CACO3, PPM	233 315. 4	193 245 5	313 313 5		
SULFATE AND SULFITE, AS SO4, PPM	211 229. 4	174 178 5	206 206 5		
CHLORIDE, AS CL, PPM	527 616. 4	467 562 5			
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	53.0 45.4 5	44.8 40.7 5	8.8 7.1 5		
TOTAL CALCIUM HARDNESS, AS CACO3, PPM	50.0 40.9 5	38.8 34.6 5	7.6 5.9 5		
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	7.4 3.4 5	5.6 5.6 5	1.0 1.1 5		
TOTAL COPPER, AS CU, PPM	L 0.1 0.1 5	L 0.1 0.05 5	L 0.1 0.1 5		
TOTAL IRON, AS FE, PPM	L 0.1 0.1 5	L 0.1 0.1 5	1.2 1.2 5		
SODIUM, AS NA, PPM	636. 644. 5	542. 537. 5	650. 554 5		
SILICA, AS SIO2, PPM	36.3 43.8 4	34.3 37.8 5	19.2 20.6 5		

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 10/15/82 REPORT DATE 11/10/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXXX MEDIAN XXXX XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	ACT 27153	AUXJW 27154	AUXLUM 27156	BCT 27157	MAINJW 27155
PH	6.9 6.9 5	9.5 8.8 5	9.4 8.5 5	7.9 6.6 5	9.4 9.3 5
SPECIFIC CONDUCTIVITY, UMHOS	9640 9010 5	2690 2699 5	1996 2360 5	10910 10910 5	2244 2380 5
ALKALINITY, P, AS CACO3, PPM	0 0 5	20 6 5	15 5 5	0 0 5	13 13 5
ALKALINITY, M, AS CACO3, PPM	23 30 5	334 364 5	293 420 5	37 20 5	250 300 5
SULFATE AND SULFITE, AS SO4, PPM	1170 1180. 5	238 242. 5	99 151. 5	1300 1300 5	153 180. 5
CHLORIDE, AS CL, PPM	1890 2495 5	449 451. 4	316 370 5	2675 2675 5	389 425. 4
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	834. 732. 5	4.2 5.9 5	19.8 23.0 5	891. 805. 5	8.8 8.8 5
TOTAL CALCIUM HARDNESS, AS CACO3, PPM	677. 596. 5	3.7 5.2 5	16.4 19.2 5	714. 655. 5	7.2 7.2 5
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	152. 130. 5	0.5 0.6 5	3.3 3.6 5	171. 144. 5	1.5 1.2 5
TOTAL COPPER, AS CU, PPM	0.09 0.06 5	0.09 0.2 5	L 0.05 0.2 5	0.07 0.08 5	0.06 0.1 5
TOTAL IRON, AS FE, PPM	0.9 0.9 5	0.4 0.9 5	L 0.05 0.1 5	1.7 1.7 5	1.0 1.2 5
SODIUM, AS NA, PPM	1650. 1750. 5	603 603 5	492. 580. 5	2120. 2120. 5	502. 536 5
SOLUBLE ZINC, AS ZN, PPM	5.1 4.0 3			5.2 5.2 3	
CHROMATE, AS CRO4, PPM	21.8 23.2 3	379. 379. 3	337. 337. 3	6.4 6.4 3	271. 280 3
REDUCED CHROMIUM, AS CR, PPM	L 1.0 1.0 3	L 1.0 15.7 3	L 1.0 14.0 3	L 1.0 1.0 3	L 1.0 1.0 3
PHOSPHATE, TOTAL, AS PO4, PPM	6.0 3.6 4			7.6 6.0 4	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	0.9 0.9 4			0.9 1.2 4	
PHOSPHATE, ORTHO-, AS PO4, PPM	0.9 0.9 4			0.9 1.2 4	
SILICA, AS SIO2, PPM	140. 152. 5	17.1 18.7 5	24.9 24.9 5	165. 165. 5	18.5 19.2 5

ENG 324A 8105

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BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas and Electric Company DATE Oct 15, 1982
ADDRESS Topock California. CUST. NO.
SYSTEM REPORTED TO D. Wood, D. Davis

The systems were inspected and samples taken for complete analysis with the exception of A LOCW and B LOCW due to the plant bypass condition. As you requested wells #1 #2 #3 were sampled for analysis. The sample from well #3 did have some silt and sand in it, but I will have it tested anyway. I left two bottles with Glenn and he is going to get us a sample of better quality as soon as possible. I will review analysis and establish new control limits for each make up source if necessary.

(1) The cooling towers are in control at present with the exception of chromate levels. Control (7-12ppm) A Tower level 49ppm B Tower level 17ppm.

(2) During this bypass condition please ensure proper chromate levels are maintained in the closed systems. With low and no flow conditions the corrosion potential is greatly increased. If possible please run tests on bypassed systems. When they start up for a short period of time take samples.

(3) As I have mentioned in the past I would recommend we monitor silica make up levels more closely. I have inspected your lab supplies and the following items are needed before the lab can run silica tests.

(1) Silica 3 Reagent Powder pillows code 2301 To be supplied by J. H-1 ofd.
(2) color viewing tubes code 2501

I will review test procedure when all supplies are in the plant.

SIGNED

ENG(G) (FIVE PART) 7809

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POOR QUALITY ORIGINAL

PG20014298

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas and Electric DATE Oct 15, 1982
ADDRESS Topeck Calif. CUST. NO.
SYSTEM REPORTED TO D. Wood D Davis

(4) The plastic graduated covers for the level indicators on the POF tanks at tower number A are on order and I will bring them to you as soon as possible

(5) As reported the C-30 drum is starting to leak a small amount. After looking at the drum Dick requested I try and order a empty drum with plastic lines to transfer the chemical. I will call you back as soon as I get the necessary information. completed 10/27/82

SIGNED John Hamel

BNG107 (FIVE PART) 7809

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POOR QUALITY ORIGINAL

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 10/15/82 REPORT DATE 11/10/82 BETZ REPRESENTATIVE HERROLD, J. J. 36	LEGEND CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	ACT 27153	AUXJW 27154	AUXLUB 27156	UCT 27157	MAINJW 27155
PH	6.9 6.9 5	9.5 8.8 5	9.4 8.5 5	7.9 6.6 5	9.4 9.3 5
SPECIFIC CONDUCTIVITY, UMHOS	9640 9010 5	2690 2699 5	1996 2360 5	10910 10910 5	2244 2380 5
ALKALINITY, P, AS CACO3, PPM	0 0 5	20 6 5	15 5 5	0 0 5	13 13 5
ALKALINITY, M, AS CACO3, PPM	23 30 5	334 364 5	293 420 5	37 20 5	250 300 5
SULFATE AND SULFITE, AS SO4, PPM	1170 1180. 5	238 242. 5	90 151. 5	1300 1300 5	153 180. 5
CHLORIDE, AS CL, PPM	1090 2495 5	449 451. 4	316 370 5	2675 2675 5	389 425. 4
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	234. 732. 5	4.2 5.9 5	19.8 23.0 5	891. 805. 5	8.8 8.8 5
TOTAL CALCIUM HARDNES AS CACO3, PPM	677. 596. 5	3.7 5.2 5	16.4 19.2 5	714. 655. 5	7.2 7.2 5
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	152. 130. 5	0.5 0.6 5	3.3 3.6 5	171. 144. 5	1.5 1.2 5
TOTAL COPPER, AS CU, PPM	0.09 0.06 5	0.09 0.2 5	L 0.05 0.2 5	0.07 0.08 5	0.06 0.1 5
TOTAL IRON, AS FE, PPM	0.9 0.9 5	0.4 0.9 5	L 0.05 0.1 5	1.7 1.7 5	1.0 1.2 5
SODIUM, AS NA, PPM	1650. 1750. 5	603 603 5	492. 580. 5	2120. 2120. 5	502. 536 5
SOLUBLE ZINC, AS ZN, PPM	5.1 4.0 3			5.2 5.2 3	
CHROMATE, AS CR4, PPM	21.8 23.2 3	379. 379. 3	337. 337. 3	6.4 6.4 3	271. 280 3
REDUCED CHROMIUM, AS CR, PPM	L 1.0 1.0 3	L 1.0 15.7 3	L 1.0 14.0 3	L 1.0 1.0 3	L 1.0 1.0 3
PHOSPHATE, TOTAL, AS PO4, PPM	6.0 3.6 4			7.6 6.0 4	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	0.9 0.9 4			0.9 1.2 4	
ORTHOPHOSPHATE, AS PO4, PPM	0.9 0.9 4			0.9 1.2 4	
SILICA, AS SIO2, PPM	140. 152. 5	17.1 18.7 5	24.9 24.9 5	165. 165. 5	18.5 19.2 5

ENG 324A 8105

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POOR QUALITY ORIGINAL

BETZ WATER & ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 10/15/82 REPORT DATE 11/10/82 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	ACT 27153	AUXJW 27154	AUXLUB 27156	BCT 27157	MAINJW 27155
PH	6.9 6.9 5	9.5 8.8 5	9.4 8.5 5	7.9 6.6 5	9.4 9.3 5
SPECIFIC CONDUCTIVITY, UMHOS	9640 9010 5	2690 2699 5	1996 2360 5	10910 10910 5	2244 2380 5
ALKALINITY, P, AS CACO3, PPM	0 0 5	20 6 5	15 5 5	0 0 5	13 13 5
ALKALINITY, M, AS CACO3, PPM	23 30 5	334 364 5	293 420 5	37 20 5	250 300 5
SULFATE AND SULFITE, AS SO4, PPM	1170 1180. 5	238 242. 5	99 151. 5	1300 1300 5	153 180. 5
CHLORIDE, AS CL, PPM	1890 2495 5	449 451. 4	316 370 5	2675 2675 5	389 425. 4
TOTAL HARDNESS, SUM OF IONS, AS CACO3, PPM	834. 732. 5	4.2 5.9 5	19.8 23.0 5	891. 805. 5	8.8 8.8 5
TOTAL CALCIUM HARDNESS, AS CACO3, PPM	677. 596. 5	3.7 5.2 5	16.4 19.2 5	714. 655. 5	7.2 7.2 5
TOTAL MAGNESIUM HARDNESS, AS CACO3, PPM	152. 130. 5	0.5 0.6 5	3.3 3.6 5	171. 144. 5	1.5 1.2 5
TOTAL COPPER, AS CU, PPM	0.09 0.06 5	0.09 0.2 5	L 0.05 0.2 5	0.07 0.08 5	0.06 0.1 5
TOTAL IRON, AS FE, PPM	0.9 0.9 5	0.4 0.9 5	L 0.05 0.1 5	1.7 1.7 5	1.0 1.2 5
SODIUM, AS NA, PPM	1650. 1750. 5	603 603 5	492. 580. 5	2120. 2120. 5	502. 536 5
SOLUBLE ZINC, AS ZN, PPM	5.1 4.0 3			5.2 5.2 3	
CHROMATE, AS CRO4, PPM	21.8 23.2 3	379. 379. 3	337. 337. 3	6.4 6.4 3	271. 280 3
REDUCED CHROMIUM, AS CR, PPM	L 1.0 1.0 3	L 1.0 15.7 3	L 1.0 14.0 3	L 1.0 1.0 3	L 1.0 1.0 3
PHOSPHATE, TOTAL, AS PO4, PPM	6.0 3.6 4			7.6 6.0 4	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	0.9 0.9 4			0.9 1.2 4	
PHOSPHATE, ORTHO-, AS PO4, PPM	0.9 0.9 4			0.9 1.2 4	
SILICA, AS SIO2, PPM	140. 152. 5	17.1 18.7 5	24.9 24.9 5	165. 165. 5	18.5 19.2 5

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BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas and Electric DATE 10/29/85
ADDRESS Topack California CUST. NO.
SYSTEM Cooling Systems REPORTED TO Dick Davis, Jim Sulen, W. Clemmey

Coupons were inspected as you requested, and I would recommend we change out the coupons and start with new ones now that the chemical changes are about complete. (Let's see what our corrosion rates are now)
MJW coupons look good but are foulded with loose iron.
A+B LOCW coupons are fouled with oil.
A+B Tower coupons are scaled as we probably got behind with our 430 chemical during the blowdown and chemical change period.

Tower chemical residual levels look good at the present time. The operators are doing a good job of testing. Very good

SIGNED Thanks John Herald

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

[illegible]	[illegible]	LEGEND AX
[illegible]	[illegible]	MEDIAN XXXX XX

	SAMPLING POINT				
	[illegible] 21[illegible]	ACT 21[illegible]	AUX JW 21[illegible]	AUX LUB 21[illegible]	ACT 21[illegible]
PH	[illegible] 8.4 5	7. 6.9 5	[illegible] 9.2 5	[illegible] 9.5 5	[illegible] 6.8 5
SPECIFIC [illegible] 2[illegible] DEG C, [illegible]	1612. 1547. 5	[illegible] 9010. 5	[illegible] 2699. 5	[illegible] 2139. 5	13340. 10910. 5
CORRECTED SPECIFIC CONDUCTANCE, [illegible]	[illegible] 1525. [illegible]				
ALKALINITY, [illegible] AS CACO[illegible], PPM	[illegible] 1. 5	[illegible] 0. 5	[illegible] 17. 5	15. 5. 5	1. 0. 5
ALKALINITY, [illegible] AS CACO[illegible], PPM	[illegible] 83. 5	14. 23. 5	[illegible] 364. 5	243. 325. 5	[illegible] 21. 5
SULFATE [illegible] SULFITE, [illegible] 5 [illegible], PPM	[illegible] 99. 5	[illegible] 1190. 5	[illegible] 247. 5	110. 146. 5	1520. 1300. 5
[illegible], AS [illegible], PPM	379. 382. 5	[illegible] 2495. 5	455. 455. 4	377. 377. 5	3420. 2675. 5
HARDNESS, TOTAL, AS CACO[illegible], PPM	125. 115. 5	[illegible] 732. 5	4. 5.8 5	[illegible] 23. 5	1120. 805. 5
CALCIUM HARDNESS, TOTAL, AS CACO[illegible], PPM	103. 94.4 5	944. 596. 5	[illegible] 5. 5	19.5 19.2 5	[illegible] 655. 5
[illegible] TOTAL, AS CACO[illegible], PPM	[illegible] 10.[illegible] 5	[illegible] 130. 5	[illegible] .5 5	3.8 3.8 5	105. 144. 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	.07 .07 5	.1 .1 5	.05 .09 5	.09 .08 5
LEAD, TOTAL, AS [illegible], PPM	.05 .05 5	1.3 1.1 5	[illegible] .5 5	.05 .09 5	[illegible] 2. 5
SODIUM, AS [illegible], PPM	[illegible] 279. 5	[illegible] 1750. 5	[illegible] 603. 5	[illegible] 570. 5	[illegible] 2120. 5
ZINC, [illegible], AS [illegible], PPM		[illegible] 4. 3			
CHROMATE, AS [illegible], PPM		[illegible] 21.8 3	[illegible] 379. 3	244. 281. 3	2.7 3.9 3
[illegible], AS [illegible], PPM		L 1. 1. 3	L 1. 1. 3	L 1. 1. 3	L 1. 1. 3
[illegible], AS [illegible], PPM	L [illegible] .4 [illegible]	[illegible]			7.2 7.4 4
[illegible], AS [illegible], PPM	L [illegible]	[illegible] 4			[illegible] .9 4
[illegible], AS [illegible], PPM	L [illegible]	[illegible]			[illegible] .9 4
[illegible], AS [illegible], PPM	[illegible] 27.5 5	[illegible] 152. 5	[illegible] 17.9 5	[illegible] 24.9 5	[illegible] 65. 5

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POOR QUALITY ORIGINAL

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

[illegible]	DATE SAMPLED [illegible]	LEGEND
	[illegible]	CURRENT TEST RESULTS: XXX.X
		MEDIAN: XXX.X XX — NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	[illegible] 2122[illegible]	[illegible] 2122[illegible]	[illegible] 2127[illegible]		
PH	[illegible]	[illegible]	[illegible]		
SPECIFIC [illegible], 25 [illegible] C, [illegible]	[illegible] 2796. 5	[illegible] 2443. 5	[illegible] 2378. 5		
ALKALINITY, [illegible] AS CACO3, [illegible]	11. [illegible]	[illegible] 4. 5	[illegible] 13. 5		
ALKALINITY, [illegible] AS CACO3, [illegible]	[illegible] 270. 5	[illegible] 220. 5	[illegible] 232. 5		
SULFATE AS SULFIT, AS SO4, PPM	[illegible] 211. 5	[illegible] 178. 5	[illegible] 197. 5		
[illegible], AS CL, PPM	[illegible] 527. 5	[illegible] 562. 5	[illegible] 456. 4		
[illegible], TOTAL, AS CACO3, PPM	41. 45.4 5	[illegible] 44.8 5	7.1 8.8 5		
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	[illegible] 43.[illegible] 5	[illegible] 38.[illegible] 5	[illegible] 7.2 5		
[illegible] HARDNESS, TOTAL, AS CACO3, PPM	[illegible] 7.4 5	[illegible] 5.7 5	1.1 1.2 5		
[illegible], TOTAL, AS CU, PPM	[illegible] .1 5	L [illegible] .05 5	[illegible] .06 5		
IRON, TOTAL, AS [illegible], PPM	L [illegible] .1 5	[illegible] .09 5	.7 1. 5		
SODIUM, AS [illegible], PPM	[illegible] 644. 5	[illegible] 537. 5	[illegible] 540. 5		
[illegible], AS [illegible], PPM	[illegible] 201. 2	[illegible] 170. 3	[illegible] 282. 3		
[illegible], [illegible] AS [illegible], PPM	L 1. 3.4 2	L 1. 1. 3	L 1. 1. 3		
SILICA, TOTAL, AS SIO2, PPM	[illegible] 42.4 5	[illegible] 36.8 5	20.4 19.2 5		

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POOR QUALITY ORIGINAL

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 1/05/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND 80 CURRENT TEST RESULTS XXXX MEDIAN XXXX XX PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 30114074H	ACT 30114080H	AUXJW 30114078H	AUXLUB 30114079H	BCT 30114075H
PH	8.3 8.4 5	7.5 7. 5	9.4 9.2 5	8.4 8.5 5	5.9 6.8 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1690. 1542. 5	9230. 9010. 5	2330. 2690. 5	2479. 2360. 5	14050. 10950. 5
ALKALINITY, "P" AS CACO3, PPM	0. 1. 5	0. 0. 5	18. 18. 5	1. 5. 5	0. 0. 5
ALKALINITY, "M" AS CACO3, PPM	85. 83. 5	39. 23. 5	233. 334. 5	269. 293. 5	16. 21. 5
SULFATE AND SULFITE, AS SO4, PPM	114. 99. 5	1120. 1170. 5	135. 238. 5	130. 130. 5	2115. 1470. 5
CHLORIDE, AS CL, PPM	366. 382. 5	2290. 2290. 5	385. 452. 4	401. 377. 5	1800. 3075. 5
HARDNESS, TOTAL, AS CACO3, PPM	114. 114. 5	720. 720. 5	5.1 5.1 5	5.9 22.5 5	1230. 891. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	92.7 93.2 5	587. 587. 5	4.4 4.4 5	5. 18.5 5	1010. 714. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	20.4 19.9 5	127. 127. 5	.7 .5 5	.9 3.6 5	211. 171. 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	.07 .07 5	.3 .1 5	.05 .05 5	.2 .08 5
IRON, TOTAL, AS FE, PPM	.06 .05 5	1.1 1.1 5	1.6 .5 5	.2 .09 5	2.5 2. 5
SODIUM, AS NA, PPM	293. 288. 5	1840. 1750. 5	495. 583. 5	532. 532. 5	3030. 2350. 5
CHROMATE, AS CRO4, PPM			252. 279. 3	363. 337. 3	
CHROMIUM, REDUCED AS CR, PPM			21. 1. 3	3. 1. 3	
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	5.8 5.8 5			10.2 7.6 5
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	.5 .8 5			1.9 .9 5
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	.4 .8 5			1.8 .9 5
SILICA, TOTAL, AS SIO2, PPM	28. 27.5 5	143. 143. 5	26. 17.9 5	27. 24.9 5	211. 180. 5

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 1/05/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND BD EXCEPT TEST RESULTS XXX.X MEDIAN XXX.X XX PUNDER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBDLA 30114076H	LUBGLB 30114077H	MAINJW 30114081H		
PH	8.4 8.4 5	8.2 8.2 5	9.4 9.1 5		
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	2813. 2796. 5	2980. 2443. 5	2570. 2380. 5		
ALKALINITY, "P" AS CACO3, PPM	1. 2. 5	0. 0. 5	22. 13. 5		
ALKALINITY, "M" AS CACO3, PPM	231. 233. 5	242. 220. 5	297. 297. 5		
SULFATE AND SULFITE, AS SO4, PPM	217. 217. 5	199. 185. 5	185. 187. 5		
CHLORIDE, AS CL, PPM	563. 563. 5	562. 562. 5	408. 429. 4		
HARDNESS, TOTAL, AS CACO3, PPM	37. 41. 5	59. 53.8 5	6.1 8.8 5		
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	28.8 32.1 5	49.6 46.5 5	5. 7.2 5		
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	7.6 7.6 5	9.3 6.8 5	1.1 1.1 5		
COPPER, TOTAL, AS CU, PPM	L .05 .08 5	L .05 .05 5	.09 .06 5		
IRON, TOTAL, AS FE, PPM	.08 .1 5	.09 .09 5	1.6 1. 5		
SODIUM, AS NA, PPM	611. 636. 5	631. 537. 5	537. 537. 5		
CHROMATE, AS CRO4, PPM	224. 224. 3	249. 212. 3	286. 282. 3		
CHROMIUM, REDUCED AS CR, PPM	L 1. 1. 3	L 1. 1. 3	23. 1. 3		
SILICA, TOTAL, AS SIO2, PPM	41. 41. 5	42. 37.8 5	20. 19.2 5		

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA [illegible]	[illegible] SA [illegible] 1/2[illegible]/[illegible] BETZ REPRESENTATIVE [illegible], J. J. [illegible]	LEGEND C[illegible] CURRENT TEST RESULTS XXX X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	[illegible] 302131150	[illegible] 302131160	[illegible] 302191170		
PH	7.9 8.3 5	7.5 8.2 5	9. 9.1 5		
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	3114. 2796. 5	[illegible] 2549. 5	2467. 2380. 5		
ALKALINITY, PPM AS CACO3, PPM	0. 7. 5	0. 9. 5	11. 13. 5		
ALKALINITY, PPM AS CACO3, PPM	232. 233. 5	193. 201. 5	266. 273. 5		
SULFATE AND SULFITE, AS SO4, PPM	200. 211. 5	131. 174. 5	97. 185. 5		
CHLORIDE, AS CL, PPM	634. 563. 5	534. [illegible]. 5	417. 413. 4		
HARDNESS, TOTAL, AS CACO3, PPM	54.7 58. 5	71.1 55.8 5	6.3 7.1 5		
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	25.9 50. 5	37. 46.4 5	5.3 6. 5		
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	14.6 8.5 5	11.9 7. 5	1.5 1.1 5		
COPPER, TOTAL, AS CU, PPM	.3 .08 5	1.3 .05 5	.05 .06 5		
IRON, TOTAL, AS FE, PPM	.5 .1 5	2.2 .09 5	.5 1. 5		
SODIUM, AS NA, PPM	601. 636. 5	547. 542. 5	526. 526. 5		
SILICA, TOTAL, AS SIO2, PPM	42. 41. 5	37. 37. 5	19. 19.2 5		

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

43 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 6/10/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	GM

	SAMPLING POINT				
	MAKEUP 30623144T	ACT 30623149T	AUXJW 30623146T	AUXLUB 30623148T	BCT 30623145T
PH	7.7	6.7	9.1	8.3	7.
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1566.	9330.	2380.	3100.	6810.
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2369.		
ALKALINITY, "P" AS CACO3, PPM	0.	0.	16.	0.	0.
ALKALINITY, "M" AS CACO3, PPM	37.	27.	276.	460.	35.
SULFATE AND SULFITE, AS SO4, PPM	98.	1170.	104.	115.	788.
CHLORIDE, AS CL, PPM	377.	2540.	350.	334.	1765.
HARDNESS, TOTAL, AS CACO3, PPM	122.	867.	6.9	21.	600.
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	100.	716.	5.9	17.	497.
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	22.	146.	1.	3.8	100.
COPPER, TOTAL, AS CU, PPM	L .05	.09	L .05	.06	L .05
IRON, TOTAL, AS FE, PPM	.09	2.4	.12	.1	1.7
SODIUM, AS NA, PPM	280.	1970.	478.	731.	1350.
PHOSPHATE, TOTAL, AS PO4, PPM	L .4	9.2			6.7
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2	2.5			1.9
PHOSPHATE, ORTHO- AS PO4, PPM	L .2	1.			L .2
SILICA, TOTAL, AS SIO2, PPM	25.7	158.	20.3	22.5	106.

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BETZ WATER AND ENERGY MANAGEMENT SERVICES

5414 PACIFIC GAS & ELEC. TOPOCK [illegible] NEEDLES, CA 92363	[illegible] BETZ REPRESENTATIVE [illegible], J. J. [illegible]	LEGEND CURRENT TEST RESULTS: XXX.X MEDIAN: XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	[illegible] 302181101	ACT 302181118	AUXJW 302181128	AUXLUB 302181138	ACT 302181148
PP	[illegible] 8.5 5	6.3 6.9 5	9. 9.2 5	8.5 8.5 5	6.3 6.8 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	162[illegible] 1612. 5	11[illegible] 9230. 5	1700. 2526. 5	2134. 2134. 5	10620. 10950. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	1617. 1601. 3				
ALKALINITY, PPM AS CACO3, PPM	0. 3. 5	0. 0. 5	0. 18. 5	2. 2. 5	0. 0. 5
ALKALINITY, PPM AS CACO3, PPM	[illegible] 83. 5	27. 23. 5	137. 299. 5	207. 269. 5	33. 33. 5
SULFATE AND SULFITE, AS SO4, PPM	59. 92. 5	1445. 1170. 5	5[illegible] 209. 5	59. 110. 5	1340. 1470. 5
CHLORIDE, AS CL, PPM	347. 379. 5	2920. 2290. 5	358. 417. 4	373. 373. 5	2025. 3075. 5
HARDNESS, TOTAL, AS CACO3, PPM	120. 115. 5	994. 720. 5	6.[illegible] 5.1 5	9.5 19.8 5	940. 940. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	98.4 94.4 5	328. 587. 5	5.4 4.4 5	7.9 16.4 5	777. 777. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	21.1 20.4 5	160. 127. 5	.5 .5 5	1.6 3.3 5	156. 171. 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	.2 .07 5	.05 .1 5	L .05 .05 5	.1 .09 5
IRON, TOTAL, AS FE, PPM	.2 .05 5	1.3 1.1 5	.[illegible] .5 5	.1 .1 5	2.5 2.3 5
SODIUM, AS NA, PPM	280. 288. 5	2000. 1750. 5	344. 539. 5	440. 492. 5	2300. 2350. 5
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	8.2 8.9 5			12.5 10.2 5
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	1.4 .9 5			1.6 1.6 5
PHOSPHATE, [illegible] AS PO4, PPM	L .2 .2 5	1.3 .9 5			1.5 1.5 5
SILICA, TOTAL, AS SIO2, PPM	26. 26.5 5	1[illegible] 133. 5	24. 17.9 5	24. 24.9 5	143. 100. 5

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BETZ WATER/ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 6/10/83 BETZ REPRESENTATIVE HERHOLD, J. J. 36N	LEGEND GM CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 30623144T	ACT 30623145T	AUXJW 30623146T	AUXLUB 30623148T	BCT 30623145T
PH	7.7 8.3 5	6.7 6.9 5	9.1 9.2 5	8.3 8.5 5	7. 7. 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1560. 1612. 5	9330. 9330. 5	2380. 2380. 5	3100. 2134. 5	6810. 10910. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2369.		
ALKALINITY, MPM AS CACO3, PPM	0. 0. 5	0. 0. 5	16. 18. 5	0. 2. 5	0. 0. 5
ALKALINITY, PPM AS CACO3, PPM	87. 85. 5	27. 27. 5	276. 276. 5	460. 269. 5	35. 35. 5
SULFATE AND SULFITE, AS SO4, PPM	98. 92. 5	1170. 1170. 5	104. 135. 5	115. 110. 5	789. 1340. 5
CHLORIDE, AS CL, PPM	377. 377. 5	2590. 2290. 5	350. 385. 5	334. 373. 5	1765. 2825. 5
HARDNESS, TOTAL, AS CACO3, PPM	122. 120. 5	637. 834. 5	6.9 5.1 5	21. 19.8 5	600. 940. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	100. 98.4 5	716. 677. 5	5.9 4.4 5	17. 16.4 5	457. 777. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	22. 21.1 5	140. 146. 5	1. .6 5	3.8 3.3 5	100. 171. 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	.05 .09 5	L .05 .09 5	.06 .05 5	L .05 .09 5
IRON, TOTAL, AS FE, PPM	.07 .04 5	2.4 1.3 5	.12 .5 5	.1 .1 5	1.7 2. 5
SODIUM, AS NA, PPM	250. 288. 5	1970. 1840. 5	476. 495. 5	731. 492. 5	1350. 2300. 5
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	9.2 6. 5			6.7 7.6 5
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	2.5 .9 5			1.9 1.6 5
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	1. .9 5			L .2 .2 5
SILICA, TOTAL, AS SIO2, PPM	23.7 26.6 5	158. 143. 5	26.3 20.3 5	22.5 24.9 5	106. 165. 5

ENO 324A 8105

TOP F 0-1-9-3-3-0-6

PG20019210

BETZ WATER AND ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 6/10/83 BETZ REPRESENTATIVE HERROLD, J. J. 30N	LEGEND GM CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAINJW 30623147T				
PH	8.6 9.1 5				
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	2660. 2467. 5				
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	2660.				
ALKALINITY, "P" AS CACO3, PPM	8. 13. 5				
ALKALINITY, "M" AS CACO3, PPM	368. 273. 5				
SULFATE AND SULFITE, AS SO4, PPM	185. 185. 5				
C[illegible]ORIDE, AS CL, PPM	382. 408. 5				
HARDNESS, TOTAL, AS CACO3, PPM	15.5 7.1 5				
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	11.6 6. 5				
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	3.8 1.5 5				
COPPER, TOTAL, AS CU, PPM	.05 .06 5				
IRON, TOTAL, AS FE, PPM	.16 .7 5				
SODIUM, AS NA, PPM	587. 526. 5				
SILICA, TOTAL, AS SIO2, PPM	16.3 18.5 5				

ENG 324 A 8105

TOP F

0 1 9 3 8 7

PG20019211

PG20034335

BETZ WATER & ENERGY MANAGEMENT SERVICES

0143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 6/10/83 BETZ REPRESENTATIVE HERRELD, J. J. 30A	LEGEND GM CURRENT TEST RESULTS xxx.x MEDIAN xxxx xx NUMBER OF MEASUREMENTS

	SAMPLING POINT				
	MAKEUP 30623144T	ACT 30623149T	AUXJW 30623146T	AUXLUB 30623148T	BCT 30623145T
PH	7.1 8.3 S	6.7 6.9 S	9.1 9.2 S	8.3 8.5 S	7. 7. S
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1500. 1612. S	9330. 9330. S	2380. 2380. S	3100. 2134. S	6810. 10910. S
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2305.		
ALKALINITY, "P" AS CACO3, PPM	0. 0. S	0. 0. S	16. 18. S	0. 2. S	0. 0. S
ALKALINITY, "M" AS CACO3, PPM	27. 85. S	27. 27. S	276. 270. S	450. 269. S	35. 35. S
SULFATE AND SULFITE, AS SO4, PPM	90. 92. S	1170. 1170. S	104. 135. S	115. 110. S	789. 1340. S
CHLORIDE, AS CL, PPM	377. 377. S	2590. 2290. S	350. 385. S	334. 373. S	1765. 2825. S
HARDNESS, TOTAL, AS CACO3, PPM	127. 120. S	857. 834. S	6.9 5.1 S	21. 19.8 S	600. 940. S
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	100. 98.4 S	716. 677. S	5.9 4.4 S	17. 16.4 S	457. 777. S
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	27. 21.1 S	140. 146. S	1. .6 S	3.8 3.3 S	100. 171. S
COPPER, TOTAL, AS CU, PPM	L .05 .05 S	.05 .09 S	L .05 .09 S	.06 .05 S	L .05 .09 S
IRON, TOTAL, AS FE, PPM	.07 .06 S	2.4 1.3 S	.12 .5 S	.1 .1 S	1.7 2. S
SODIUM, AS NA, PPM	290. 288. S	1970. 1840. S	476. 495. S	731. 492. S	1350. 2300. S
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 S	9.2 6. S			6.7 7.6 S
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 S	2.5 .9 S			1.9 1.6 S
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 S	1. .9 S			L .2 .9 S
SILICA, TOTAL, AS SIO2, PPM	25.7 26.6 S	158. 143. S	20.3 20.3 S	22.5 24.9 S	100. 165. S

ENG 334A 8100

TOP B6 1 0 8 2 9 3

PG20034336

BETZ WATER & ENERGY MANAGEMENT SERVICES

143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 6/10/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	GM

	SAMPLING POINT				
	MAINJW 30623147T				
PH	8.6				
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	2660.				
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	2660.				
ALKALINITY, "P" AS CACO3, PPM	6.				
ALKALINITY, "M" AS CACO3, PPM	368.				
SULFATE AND SULFITE, AS SO4, PPM	185.				
CHLORIDE, AS CL, PPM	382.				
HARDNESS, TOTAL, AS CACO3, PPM	15.5				
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	11.6				
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	3.8				
COPPER, TOTAL, AS CU, PPM	.05				
IRON, TOTAL, AS FE, PPM	.18				
SODIUM, AS NA, PPM	587.				
SILICA, TOTAL, AS SIO2, PPM	16.3				

ENG 324A R105

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PG20034333

BETZ WATER & ENERGY MANAGEMENT SERVICES

PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 8/17/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	JL

	SAMPLING POINT				
	ACT 30921064H	AUXJW 30921065H	AUXLUB 30921066H	RCT 30921067H	LUBOLA 30921068H
PH	7.0	8.0	8.1	5.5	8.1 S
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	10600.	2334.	2864.	10240.	2589. S
CORRECTED SPECIFIC CONDUCTANCE, UMHOS		2276.			
ALKALINITY, PH AS CACO3, PPM	0.	24.	0.	0.	0. S
ALKALINITY, MO AS CACO3, PPM	121.	266.	410.	12.	223. S
SULFATE AND SULFITE, AS SO4, PPM	1135.	110.	153.	1325.	136. S
CHLORIDE, AS CL, PPM	2520.	378.	430.	2425.	464. S
HARDNESS, TOTAL, AS CACO3, PPM	622.	3.9	14.4	900.	33. S
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	497.	3.4	12.	740.	28. S
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	126.	.6	2.4	152.	4.6 S
COPPER, TOTAL, AS CU, PPM	.06	.16	L .05	.17	L .05 S
IRON, TOTAL, AS FE, PPM	.22	1.5	L .05	5.1	.24 S
SODIUM, AS NA, PPM	1830.	470.	570.	1980.	510. S
PHOSPHATE, TOTAL, AS PO4, PPM	3.8			15.3	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	1.3			2.4	
PHOSPHATE, ORTHO- AS PO4, PPM	.6			2.	
SILICA, TOTAL, AS SIO2, PPM	119.	24.	24.	187.	36. S

ENG 224A 9105

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BETZ WATER & ENERGY MANAGEMENT SERVICES

43 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 8/17/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	JL

	SAMPLING POINT				
	LUBOLB 30921069H	MAINJW 30921070H			
PH	8.	7.9			
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	2795.	2768.			
ALKALINITY, "P" AS CACO3, PPM	0.	0.			
ALKALINITY, "M" AS CACO3, PPM	310.	360.			
SULFATE AND SULFITE, AS SO4, PPM	195.	228.			
CHLORIDE, AS CL, PPM	509.	441.			
HARDNESS, TOTAL, AS CACO3, PPM	53.	8.5			
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	47.	7.			
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	6.	1.5			
COPPER, TOTAL, AS CU, PPM	.05	.05			
IRON, TOTAL, AS FE, PPM	.28	.93			
SODIUM, AS NA, PPM	553.	555.			
SILICA, TOTAL, AS SIO2, PPM	30.	20.			

ENG 324A 8105

TOP B6 1082972

POOR QUALITY ORIGINAL

PG20034331

BETZ WATER AND ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT MEEDLES, CA 92363	DATE SAMPLED 12/14/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND AT CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 40103056H	ACT 40103062H	AUXJW 40103057H	AUXLUB 40103063H	BCT 40103060H
PH	8. 8.3 5	7.2 7.2 5	8.8 9. 5	8. 8.3 5	6.6 6.6 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1574. 1612. 5	7880. 9330. 5	2280. 2330. 5	3880. 2869. 5	7500. 10240. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2190. 2276. 3		
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	6. 16. 5	0. 0. 5	0. 0. 5
ALKALINITY, "M" AS CACO3, PPM	88. 85. 5	48. 39. 5	252. 252. 5	648. 416. 5	30. 30. 5
SULFATE AND SULFITE, AS SO4, PPM	105. 98. 5	1135. 1135. 5	119. 110. 5	149. 130. 5	1190. 1325. 5
CHLORIDE, AS CL, PPM	346. 366. 5	2065. 2520. 5	372. 372. 5	435. 401. 5	1880. 2425. 5
HARDNESS, TOTAL, AS CACO3, PPM	107. 120. 5	603. 720. 5	6.9 6.3 5	16.9 14.4 5	570. 900. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	88. 98.4 5	490. 587. 5	6. 5.6 5	10.6 10.6 5	462. 740. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	18.4 21.1 5	108. 127. 5	.9 .7 5	6.3 2.4 5	103. 152. 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	.09 .09 5	L .05 .06 5	L .05 .05 5	.21 .17 5
IRON, TOTAL, AS FE, PPM	.12 .09 5	1.2 1.2 5	.24 .9 5	L .05 .1 5	4.6 2.5 5
SODIUM, AS NA, PPM	246. 280. 5	1540. 1840. 5	458. 478. 5	705. 570. 5	1530. 1980. 5
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	5.8 5.8 5			12.6 12.5 5
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	1.4 1.4 5			1.9 1.9 5
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	1.2 1. 5			1.6 1.6 5
SILICA, TOTAL, AS SIO2, PPM	30. 27.5 5	147. 147. 5	29. 24. 5	30. 24. 5	124. 143. 5

ENG 324A 8106

TOP B6 1 0 8 2 8 9

POOR QUALITY ORIGINAL

PG20034256

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BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE 12-14-83
ADDRESS Topaz California CUST. NO.
SYSTEM REPORTED TO D. Wood, D. Paris, K. Ridings

All systems were inspected and water samples were taken for complete analysis. A and B cooling systems chemistry is in proper order and microbiological control is much better. I am sure this is due to more circulation in the towers. If you see an increase shut feed 1 gal of C-3D to the tower. Water distribution was checked and is as good as can be expected with the present distribution system. We are getting some scale in low flow areas; but to get flow to these areas would require a re work of the system. Please review the enclosed corrosion report. I am very pleased with the results we are getting during these by pass operation conditions. The A LOCW rate is 2.2 mils/year which is higher than we would like, but the system appears to be cleaning itself up of oil from old leaks. The rates should get better in this system as it cleans up.

When the operators add 430 to the towers could you please have them note the amount fed on a daily basis. They are doing this on all the other chemicals and it helps me to review and ensure proper chemical feed levels.

SIGNED Thanks Jack Donald

ENG107 (FIVE PART) 7809

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TOP B6

1082-14

BETZ WATER & ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 12/14/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND AT CURRENT TEST RESULTS XXXX MEDIAN XXXX XX INCHES OF PRESSURE RESULTS

	SAMPLING POINT				
	MAKEUP 40103056H	ACT 40103062H	AUXJW 40103057H	AUXLUB 40103063H	BCT 40103060H
PH	8. 8.3 5	7.2 7.2 5	8.8 9. 5	8. 8.3 5	6.6 6.6 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1574. 1612. 5	7880. 9330. 5	2280. 2330. 5	3880. 2869. 5	7500. 10140. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2190. 2276. 3		
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	6. 16. 5	0. 0. 5	0. 0. 5
ALKALINITY, "M" AS CACO3, PPM	88. 85. 5	48. 39. 5	252. 252. 5	648. 416. 5	30. 30. 5
SULFATE AND SULFITE, AS SO4, PPM	105. 98. 5	1135. 1135. 5	119. 110. 5	149. 130. 5	1190. 1228. 5
CHLORIDE, AS CL, PPM	346. 366. 5	2065. 2520. 5	372. 372. 5	435. 401. 5	1880. 2425. 5
HARDNESS, TOTAL, AS CACO3, PPM	107. 120. 5	603. 720. 5	6.9 6.3 5	16.9 14.4 5	570. 900. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	88. 98.4 5	490. 587. 5	6. 5.6 5	10.6 10.6 5	462. 740. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	18.4 21.1 5	108. 127. 5	.9 .7 5	6.3 2.4 5	103. 152. 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	.09 .09 5	L .05 .06 5	L .05 .05 5	.21 .17 5
IRON, TOTAL, AS FE, PPM	.12 .09 5	1.2 1.2 5	.24 .9 5	L .05 .1 5	4.6 2.5 5
SODIUM, AS NA, PPM	246. 280. 5	1540. 1840. 5	458. 478. 5	705. 570. 5	1530. 1980. 5
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	5.8 5.8 5			12.6 12.5 5
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	1.4 1.4 5			1.9 1.9 5
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	1.2 1. 5			1.6 1.6 5
SILICA, TOTAL, AS SIO2, PPM	30. 27.5 5	147. 147. 5	29. 24. 5	30. 24. 5	124. 143. 5

ENG 3/4A 8105

TOP F 0 1 4 6 4 0

POOR QUALITY ORIGINAL

PG20014488

PG20034332

BETZ WATER AND ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLES, CA 92363	DATE SAMPLED 12/14/83 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND AT CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBULA 40103058H	LUBOLB 40103059H	MAINJW 40103061H		
PH	8.2 8.2 5	7.8 8. 5	8.9 8.9 5		
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	2480. 2589. 5	2980. 2795. 5	2590. 2590. 5		
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			2540. 2600. 2		
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	18. 11. 5		
ALKALINITY, "M" AS CACO3, PPM	236. 231. 5	320. 242. 5	336. 336. 5		
SULFATE AND SULFITE, AS SO4, PPM	137. 146. 5	168. 168. 5	182. 185. 5		
[illegible]ORIDE, AS CL, PPM	445. 509. 5	479. 551. 5	409. 409. 5		
HARDNESS, TOTAL, AS CACO3, PPM	23. 37. 5	48. 53.8 5	7. 7. 5		
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	19.1 28.8 5	42. 47. 5	5.3 5.3 5		
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	3.6 7.6 5	5.8 6.8 5	1.7 1.5 5		
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	L .05 .05 5	.08 .05 5		
IRON, TOTAL, AS FE, PPM	.1 .1 5	.18 .18 5	1.6 .93 5		
SODIUM, AS NA, PPM	486. 519. 5	571. 553. 5	516. 537. 5		
SILICA, TOTAL, AS SIO2, PPM	36. 36. 5	40. 39. 5	21. 20. 5		

LNG 324A 8106

TOP B6 1 0 8 2 9 0

POOR QUALITY ORIGINAL

PG20034255

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE 2-16-84
ADDRESS Topock California CUST. NO.
SYSTEM REPORTED TO J. Berry, D. Davis, D. Wood

In the present by pass condition please make sure chromate levels are at the upper level of control limits (12 ppm Tower water) (300 ppm closed systems.)
Also continue to make 562 C or 562 B additions to the closed systems when chromate is called for.
If microbiological problems should increase there is a drum of C-30 in the chemical storage area. The C-63P should be fine if you get enough circulation.

Corrosion reports are excellent with the exception of two mild steel results above 1 mpy. As we would expect these two were from the A and B Loop systems and were caused from oil fouling. The oil situation is getting better all the time. The copper coupon rates are also excellent.

Water analysis PH - note B CT has been running a little low. When unit gets up on line it should be readjusted to control at (7.2)
This will help bring down the copper and iron levels in the water.

SIGNED [signature]

END107 (FIVE PART) 7508

TOP B6 1082 13

PG20034254

BOILER: Total Daily Steam Flow _____ lbs Feedwater Temperature ____ F Fuel _____ per day Blowdown ☐ Continuous ☐ Manual Pressure _____ psi	CHEMICAL	S/C	FEED POINT	#/DAY
COOLING: Makeup _____ ☐ gpm ☐ gpd WATER TEMPERATURES Circulation Rate _____ gpm Return ____ F, Sump ____ F				
LAST INSPECTION DATE: _____ CONDITIONS: ☐ Good ☐ See Report				
SAMPLED: ☐ Yes ☐ No Are samples duplicates of System Review tests? ☐ Yes ☐ No Are samples duplicates of plant tests? ☐ Yes ☐ No Number of points sampled ____ Are there any major operational changes since last review? ☐ No ☐ See Interoffice.				

COMPANY Pacific Gas and Electric DATE 6/6/84

ADDRESS Hopeh Calif CUST. NO. _____

SYSTEM _____ REPORTED TO D. DAVIS, W. CRANNEY

In the present by pass condition please make sure all chromate levels are at the upper control limit (12ppm towers) (300ppm closed systems) The most recent corrosion coupons look very good and the results are attached. Most important is the closed systems with the present no flow conditions. The chromate and TTA are doing an excellent job

microbiological control - very good

In our conversation I will arrange to get a spectrophotometer for use in the lab. I will call you with a list of requests to order and we will plan a training session the last part of July. This will allow us to do additional tests for tighter control to ensure excellent results.

SIGNED [signature] Jack Harold.

ENG107 (FIVE PARTS) 7809

3 - DISTRICT FILE

TOP B6 1082-2

POOR QUALITY ORIGINAL

63-8216 (REV. 10/83)

PG&E
FOR INTRA—COMPANY USES

From Division or Department: Engineering Research
To Division or Department:
FILE NO: 006.2 (3203)
RE LETTER OF: 8-12-85
SUBJECT: Phosphate Treatment, Topock Compressor Station

September 24, 1985

CATHY E. RINCON:

Here is a follow up to our telephone conversation and my telecopied response to you on August 16, 1985.

1. The 2040 phosphate inhibitive blend (40 ppm or less) in the cooling towers and in the ponds should not endanger the life of the PVC pond liners. No damage to PVC from concentrated 2040 products has been reported to date. PVC containers are used for long term product storage and PVC lined trucks are used commonly for transporting the product.

2. Recent research data show that orthophosphates and polyphosphates are both anodic inhibitors in the presence of oxygen as are chromates. They are commonly combined with chromates (up to 30- 70 ppm of chromates and phosphates) to form dual anodic inhibitors (called Dianodic products) for water treatment. These products will not produce undesirable chemical reactions/by-products. The phosphonates and Betz 2020 polymer, which are being considered for use in the compressor station's cooling tower water, will be inert to the chromate-phosphate system. These compounds will function as calcium phosphate deposition controlling agents.

J. A. HANCK

PABurda(551-352):bd
0105c,881y(bd)

cc: DTYorke
GNekoksa
SGSharp

TOP F

PG20016983

Betz industrial

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92	DATE SAMPLED 3/12/87 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND DJ CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 70327111H	ACT 70327112H	AUXJW 70327114H	AUXLUB 70327117H	BCT 70327113H
PH	9.1 8. 5	6.5 6.5 5	9.8 9.4 5	9.9 8.5 5	5.7 5.9 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	2440. 1574. 5	8800. 8850. 5	3580. 3130. 5	5830. 3408. 5	8660. 7830. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	2280.		3200. 3080. 5	5320. 3330. 3	
ALKALINITY, "P" AS CACO3, PPM	21. 0. 5	0. 0. 5	64. 26. 5	86. 3. 5	0. 0. 5
ALKALINITY, "M" AS CACO3, PPM	161. 90. 5	32. 28. 5	507. 350. 5	976. 365. 5	16. 19. 5
SULFATE AND SULFITE, AS SO4, PPM	157. 105. 5	1230. 1400. 5	133. 130. 5	144. 131. 5	1210. 1100. 5
CHLORIDE, AS CL, PPM	608. 361. 5	2550. 2750. 5	383. 400. 5	374. 397. 5	2470. 2230. 5
HARDNESS, TOTAL, AS CACO3, PPM	189. 115. 5	706. 856. 5	14.6 15.8 5	13.2 21. 5	752. 699. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	160. 95. 5	586. 707. 5	13. 13.4 5	12. 18.2 5	623. 546. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	27. 19.5 5	115. 143. 5	1.5 .5 5	1.2 2.9 5	124. 124. 5
COPPER, TOTAL, AS CU, PPM	.05 .05 5	.13 .13 5	1.4 .61 5	.63 .37 5	.1 .09 5
IRON, TOTAL, AS FE, PPM	1.5 .14 5	1.4 1.3 5	12.6 7. 5	1.1 .43 5	2.1 1.9 5
SODIUM, AS NA, PPM	457. 260. 5	1630. 1820. 5	848. 707. 5	1330. 694. 5	1720. 1580. 5
MOLYBDENUM, AS MOO4, PPM			617. 492. 3	602. 390. 2	
NITRITE, AS NO2, PPM			443.		
PHOSPHATE, TOTAL, AS PO4, PPM	.4 .4 5	15.4 15.4 5			31. 14.4 5
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	.3 .2 5	14.1 14.1 5			28. 18. 5
PHOSPHATE, ORTHO- AS PO4, PPM	.3 .2 5	13.1 13.1 5			24. 15.8 5
SILICA, TOTAL, AS SIO2, PPM	35. 30. 5	171. 171. 5	27. 22. 5	28. 24. 5	147. 141. 5

END 394A 8/01

TOP F

PG20021855

Betz Industrial

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92	DATE SAMPLED 3/12/87 BETZ REPRESENTATIVE HERROLD, J. J. 36N	LEGEND DJ CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	LUBOLA 70327115H	LUBOLB 70327116h	MAINJW 70327118H		
PH	8.4 7.8 5	8.4 8.3 5	9. 8.8 5		
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	3260. 3580. 5	3150. 4480. 5	2530. 3000. 5		
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	3030. 3290. 2	2940. 3475. 2	2300. 2880. 5		
ALKALINITY, "P" AS CACO3, PPM	2. 0. 5	2. 2. 5	11. 8. 5		
ALKALINITY, "M" AS CACO3, PPM	399. 462. 5	329. 388. 5	262. 290. 5		
SULFATE AND SULFITE, AS SO4, PPM	167. 171. 5	155. 232. 5	122. 119. 5		
CHLORIDE, AS CL, PPM	531. 621. 5	467. 699. 5	372. 402. 5		
HARDNESS, TOTAL, AS CACO3, PPM	81. 60. 5	130. 112. 5	16.1 70. 5		
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	67. 50. 5	108. 92. 5	13.5 57. 5		
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	13.6 12. 5	21. 18.7 5	2.4 12.5 5		
COPPER, TOTAL, AS CU, PPM	.29 .29 5	.25 .26 5	.34 .34 5		
IRON, TOTAL, AS FE, PPM	.64 .4 5	3.4 1.2 5	3.5 3. 5		
SODIUM, AS NA, PPM	748. 812. 5	681. 975. 5	588. 604. 5		
MOLYBDENUM, AS MOO4, PPM	405.	424.	300. 340. 2		
SILICA, TOTAL, AS SIO2, PPM	36. 36. 5	32. 45. 5	27. 25. 5		

ENG 3244 8701

TOP F 0220064

PG20021856

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE 5/31/87
ADDRESS Topock California CUST. NO.
SYSTEM Cooling Systems REPORTED TO Jim Sodan, Blake Parnell

A + B Towers were inspected and chemical residual tests run to [illegible] proper chemical levels.

A. Towers looked good with the exception of no acid feed to the towers (pump not primed). The acid and conductivity control system were found turned out. Treat the conductivity but left the acid feed system turned off until the acid pump can be reprimed. Also please check out the blowdown control.

(B) Towers chemical residual tests seem to agree with many tests. What time of inspection was 6.8 & conductivity was in control. There seemed to be a lot of algae in the towers basin, if it continued to be a problem please feel good C-30 to the basin and continue your C-77P tablet usage.

SIGNED

ENG101 (FIVE PART) 7808

2

TOP F 0 2 2 0 5 0

POOR QUALITY ORIGINAL

PG20021850

BETZ WATER & ENERGY MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. [illegible] COMP STAT [illegible]	DATE SAMPLED [illegible] BETZ REPRESENTATIVE [illegible]	LEGEND CURRENT TEST RESULTS: XXXX MEDIAN: XXXX XX [illegible]

	SAMPLING POINT				
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PH	[illegible]	7.	9.7	6.2	[illegible]
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	[illegible] 2360.	[illegible] 9700.	[illegible] 3350.	[illegible] 5650.	[illegible] 3550.
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	[illegible] 2200.		[illegible] 3200.		[illegible] 3400.
ALKALINITY, "P" AS CACO3, PPM	[illegible] 3.	0. 0.	[illegible] 56.	0. 0.	[illegible]
ALKALINITY, "M" AS CACO3, PPM	[illegible] 121.	[illegible] 25.	[illegible] 450.	[illegible] 10.	[illegible]
SULFATE AND SULFITE, AS SO4, PPM	[illegible] 157.	[illegible] 1520.	[illegible] 135.	[illegible] 1510.	[illegible] 120.
CHLORIDE, AS CL, PPM	[illegible] 590.	[illegible] 2850.	[illegible] 367.	[illegible] 2490.	[illegible] 400.
HARDNESS, TOTAL, AS CACO3, PPM	[illegible] 188.	[illegible] 1030.	[illegible] 12.5	[illegible] 899.	[illegible]
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	[illegible] 154.	[illegible] 640.	[illegible] 10.4	[illegible] 742.	[illegible]
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	[illegible] 27.	[illegible] 172.	[illegible] 2.	[illegible] 150.	[illegible]
COPPER, TOTAL, AS CU, PPM	[illegible] .05	[illegible] .08	[illegible] 1.1	[illegible] .06	[illegible]
IRON, TOTAL, AS FE, PPM	[illegible] .08	[illegible] 1.	[illegible] 10.8	[illegible] .71	[illegible]
SODIUM, AS NA, PPM	[illegible] 437.	[illegible] 2271.	[illegible] 765.	[illegible] 1900.	[illegible] 643.
MOLYBDENUM, AS MO4, PPM			[illegible] 556.		[illegible] 503.
NITRITE, AS NO2, PPM			[illegible] 392.		
PHOSPHATE, TOTAL, AS PO4, PPM	[illegible]	[illegible] 14.		[illegible] 14.0	
PHOSPHATE, TOTAL, [illegible], PPM	[illegible]	[illegible] 15.0		[illegible] 14.3	
PHOSPHATE, ORTHO-AS PO4, PPM	[illegible]	[illegible] 12.1		[illegible] 13.6	
SILICA, TOTAL, [illegible]	[illegible]	[illegible] 169.	[illegible] 27.	[illegible] 155.	[illegible]

TOP A1 0004350

POOR QUALITY ORIGINAL

PG20004227

BETZ WATER MANAGEMENT SERVICES

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92	DATE SAMPLED 1/11/88 BETZ REPRESENTATIVE HERROLD, J. J. 36N	D.

	SAMPLING POINT				
	MAKEUP 80208196H	LUBOLA 80206197H			
PH	8.4	8.6			
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	2110.	5810.			
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	1930.	5480.			
ALKALINITY, "P" AS CACO3, PPM	3.	17.			
ALKALINITY, "M" AS CACO3, PPM	114.	753.			
SULFATE AND SULFITE, AS SO4, PPM	129.	400.			
CHLORIDE, AS CL, PPM	497.	1160.			
HARDNESS, TOTAL, AS CACO3, PPM	150.	73.			
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	122.	56.			
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	26.	15.5			
COPPER, TOTAL, AS CU, PPM	L .05	.31			
IRON, TOTAL, AS FE, PPM	L .05	.93			
SODIUM, AS NA, PPM	357.	1330.			
MOLYBDENUM, AS MOO4, PPM		479.			
PHOSPHATE, TOTAL, AS PO4, PPM	L .4				
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2				
PHOSPHATE, ORTHO-AS PO4, PPM	L .2				
SILICA, TOTAL, AS SIO2, PPM	34.	69.			

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POOR QUALITY ORIGINAL

PG20004228

BI BETZ INDUSTRIAL

The Water Management Division of Betz Laboratories, Inc.

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 10/25/89 BETZ REPRESENTATIVE HERROLD, J. J. 36N	KV LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP 91103081H	BCT 91103082H	LUBOLA 91103083H	ACT 91103084H	LUBOLB 91103085H
PH	8.1 8.1 5	6.9 6.5 5	8.7 8.6 5	6.8 7.5 5	9.2 8.8 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1820. 1740. 5	9460. 9080. 5	9670. 9850. 5	11000. 10100. 5	8680. 7460. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			9470. 9710. 4		8460. 7260. 5
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	17. 18. 5	0. 0. 5	75. 26. 5
ALKALINITY, "M" AS CACO3, PPM	86. 87. 5	33. 19. 5	424. 555. 5	40. 54. 5	790. 659. 5
SULFATE AND SULFITE, AS SO4, PPM	142. 125. 5	1230. 1210. 5	985. 974. 5	1500. 1350. 5	694. 488. 5
CHLORIDE, AS CL, PPM	432. 447. 5	2540. 2450. 5	2160. 2370. 5	2990. 2740. 5	1760. 1240. 5
HARDNESS, TOTAL, AS CACO3, PPM	149. 138. 5	878. 757. 5	373. 210. 5	1020. 831. 5	66. 96. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	124. 114. 5	734. 623. 5	320. 177. 5	858. 687. 5	61. 85. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	24. 23. 5	138. 124. 5	49. 31. 5	159. 138. 5	4.2 10. 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	L .05 .05 5	.75 .89 5	L .05 .05 5	.55 .33 5
IRON, TOTAL, AS FE, PPM	.97 .06 5	.61 .39 5	4.6 5.2 5	.76 .22 5	2.9 1.7 5
SODIUM, AS NA, PPM	326. 291. 5	1960. 1730. 5	2260. 2290. 5	2200. 2130. 5	2140. 1690. 5
MOLYBDENUM, AS MOO4, PPM			626. 513. 5		849. 629. 5
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	25. 9.9 5		26. 5.6 5	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	.3 .2 5	24. 9.9 5		25. 5.6 5	
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	21. 9.1 5		21. 5.3 5	
SILICA, TOTAL, AS SIO2, PPM	24.6 27. 5	141. 138. 5	82.3 82. 5	154. 147. 5	74.2 68.5 4

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PG20004226

BI BETZ INDUSTRIAL

The Water Management Division of Betz Laboratories, Inc.

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 03/21/89 BETZ REPRESENTATIVE HERROLD, J. J. 36N	DO LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	BCT 90405070H	ACT 90405071H	LUBOLA 90405072H	AUXLUB 90405073H	AUXJW 90405074H
PH	5.4 6.5 5	6.7 6.7 5	8.7 8.3 5	10.4 10.7 5	9.8 9.7 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	8800. 9310. 5	10100. 10700. 5	9800. 9090. 5	9810. 10800. 5	3660. 3440. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			9590. 7655. 2	9480. 10400. 5	3570. 3270. 5
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	22. 0. 5	284. 302. 5	65. 57. 5
ALKALINITY, "M" AS CACO3, PPM	7. 22. 5	15. 29. 5	549. 710. 5	1860. 2060. 5	434. 389. 5
SULFATE AND SULFITE, AS SO4, PPM	1280. 1210. 5	1400. 1350. 5	974. 400. 5	218. 222. 4	140. 130. 5
CHLORIDE, AS CL, PPM	2390. 2390. 5	2730. 2740. 5	2370. 2110. 5	426. 428. 5	423. 420. 5
HARDNESS, TOTAL, AS CACO3, PPM	726. 653. 5	771. 831. 5	210. 213. 5	12.6 10.5 5	10.9 11.2 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	598. 533. 5	636. 687. 5	177. 177. 5	10.4 9.4 5	9.8 9.9 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	124. 122. 5	130. 138. 5	31. 33. 5	2.2 .72 5	1. .62 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	L .05 .05 5	.77 .51 5	2.6 2.5 5	.53 .47 5
IRON, TOTAL, AS FE, PPM	.39 .41 5	.22 .34 5	4.9 2.1 5	3.2 3.1 5	3.5 3.2 5
SODIUM, AS NA, PPM	1610. 1730. 5	1740. 2130. 5	2290. 1950. 5	2840. 2390. 5	769. 777. 5
MOLYBDENUM, AS MOO4, PPM			513. 507. 5	2540 1200. 5	593. 530. 5
NITRITE, AS NO2, PPM	low 2040 fwd	low 2040 fwd.		high no problem	145. 407. 5
PHOSPHATE, TOTAL, AS PO4, PPM	6.6 12.5 5	5.6 10.4 5		but not necessary.	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	6.6 12.1 5	5.6 9.7 5			
PHOSPHATE, ORTHO- AS PO4, PPM	5.9 10.9 5	5.3 8.9 5			
SILICA, TOTAL, AS SIO2, PPM	143. 144. 5	157. 155. 5	83. 82. 5	28. 28. 5	28. 26. 5
	good	good			

TOP F

POOR QUALITY ORIGINAL

PG20021847

BI BETZ INDUSTRIAL

The Water Management Division of Betz Laboratories, Inc.

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 03/21/89 BETZ REPRESENTATIVE HERROLD, J. J. 36N	DO LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAINJW 90405075H				
PH	8.8 8.4 5				
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	3290. 3310. 5				
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	3200. 3195. 4				
ALKALINITY, "P" AS CACO3, PPM	17. 5. 5				
ALKALINITY, "M" AS CACO3, PPM	382. 384. 5				
SULFATE AND SULFITE, AS SO4, PPM	174. 148. 5				
CHLORIDE, AS CL, PPM	444. 420. 5				
HARDNESS, TOTAL, AS CACO3, PPM	38. 44. 5				
CALCIUM HARDNESS, TOTAL,AS CACO3,PPM	31. 35. 5				
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	6.5 8.7 5				
COPPER, TOTAL, AS CU, PPM	.34 .39 5				
IRON, TOTAL, AS FE, PPM	2.3 3.1 5				
SODIUM, AS NA, PPM	732. 694. 5				
MOLYBDENUM, AS MOO4,PPM	491. 217. 5				
NITRITE, AS NO2, PPM					
PHOSPHATE, TOTAL, AS PO4, PPM					
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM					
PHOSPHATE, ORTHO- AS PO4, PPM					
SILICA, TOTAL, AS SIO2, PPM	29. 29. 5				

TOP F 0220560

POOR QUALITY ORIGINAL

PG20021848

BETZ
TREVOSE, PENNSYLVANIA 19047

SYSTEM REVIEW

COMPANY Pacific Gas + Electric DATE 5/31/89
ADDRESS Topock California CUST. NO.
SYSTEM Cooling Systems REPORTED TO Jim Soden, Robert Pagnell

A+B towers were inspected and chemical residual tests run to insure proper chemical levels.

(A) Tower looks good with the exception of no acid feed to the tower. (pump not primed). The acid and conductivity control system was found timed out. I reset the conductivity but left the acid feed system turned off until the acid pump can be reprimed. Also please check out the blowdown control.

(B) Tower chemical residual tests seem to agree with my tests. PH at time of inspection was 6.8 and conductivity was in control. There seemed to be alot of algae in the tower basin, if it continues to be a problem please feed 1 gal C-30 to the basin and continue your C-77 P tablet usage.

SIGNED Thanks
Jon Henwood

ENG107 (FIVE PART) 7805

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TOP F 0222047

POOR QUALITY ORIGINAL

PG20021849

Betz

041-3 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 02/15/90 BETZ REPRESENTATIVE VELEZ, J. A. 24V	LEGEND CU CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP A0223040M	ECT A0223041M	ACT A0223042M	QUECLA A0223043M	QUECLA A0223044
PH	6.1 5	5.9 5	7.5 5	9. 5	5.5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1740. 5	7280. 5260. 5	8400. 10000. 5	10000. 8630. 5	10000. 10000.
CORRECTED SPECIFIC CONDUCTANCE, UMHOS				10000. 8460. 5	
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	0. 0. 5	55. 61. 5	0. 14.
ALKALINITY, "M" AS CACO3, PPM	86. 85. 5	36. 12. 5	41. 54. 5	720. 741. 5	212. 279.
SULFATE AND SULFITE, AS SO4, PPM	131. 125. 5	1050. 1210. 5	945. 1300. 5	959. 673. 5	1230. 955.
CHLORIDE, AS CL, PPM	410. 432. 5	2020. 2540. 5	1690. 2990. 5	2320. 1780. 5	2320. 2220.
HARDNESS, TOTAL, AS CACO3, PPM	126. 135. 5	385. 378. 5	341. 1020. 5	115. 65. 5	388. 373.
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	103. 114. 5	450. 734. 5	447. 856. 5	104. 53. 5	489. 320.
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	21. 23. 5	102. 133. 5	90. 159. 5	9. 4.2 5	79. 50.
COPPER, TOTAL, AS CU, PPM	.09 .05 5	.05 .05 5	.05 .05 5	.5 .5 5	.63
IRON, TOTAL, AS FE, PPM	.1 .05 5	.65 .42 5	.73 .18 5	3. 2.5 5	.7 2.2
SODIUM, AS NA, PPM	3.2. 231. 5	1440. 1960. 5	1210. 2200. 5	2500. 2240. 5	2.30. 2450.
MOLYBDENUM, AS MO4, PPM				750. 349. 5	4.. 552.
NITRITE, AS NO2, PPM					
PHOSPHATE, TOTAL, AS PO4, PPM	.4 .4 5	17.5 11.7 5	21. 11.6 5		
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	.2 .2 5	16.9 11.7 5	21. 11.5 5		
PHOSPHATE, ORTHO, AS PO4, PPM	.2 .2 5	14.1 10.5 5	17.2 5.6 5		
SILICA, TOTAL, AS SIO2, PPM	25. 25. 5	105. 139. 5	100. 132. 5	90. 77.1 5	1.. 54.

TOP A1 0004372

Betz

04163 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 03/15/90 BETZ REPRESENTATIVE VELEZ, J. A. 24V	LEGEND CURRENT TEST RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP A0409033H	BCT A0409034H	AUXUB A0409035H	AUXLUB A0409036H	ACT A0409037
PH	7.8 8.1 5	6.5 5.9 5	9.6 9.7 5	9. 9.5 5	6.[illegible] 6.9
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1750. 1740. 5	9100. 9260. 5	3870. 3470. 5	9880. 9890. 5	7500. 8260.
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			3640. 3410. 5	9630. 9680. 5	
ALKALINITY, MPM AS CACO3, PPM	0. 0. 5	0. 0. 5	73. 55. 5	70. 152. 5	0. 0.
ALKALINITY, MPM AS CACO3, PPM	33. 86. 5	12. 12. 5	478. 380. 5	1950. 1950. 5	12. 42.
SULFATE AND SULFITE, AS SO4, PPM	120. 131. 5	991. 1170. 5	144. 138. 5	198. 260. 5	255. 1160.
CHLORIDE, AS CL, PPM	406. 432. 5	2100. 2540. 5	414. 451. 5	414. 434. 5	1950. 2260.
HARDNESS, TOTAL, AS CACO3, PPM	132. 138. 5	715. 878. 5	13.3 10.4 5	41. 17.1 5	679. 771.
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	109. 114. 5	592. 734. 5	8.4 8.7 5	35. 15.2 5	562. 642.
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	22. 23. 5	114. 138. 5	4.8 1.8 5	5.2 2.5 5	113. 123.
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	L .05 .05 5	1.1 .64 5	[illegible] 2.2 5	L .05 .05
IRON, TOTAL, AS FE, PPM	L .05 .1 5	.46 .61 5	6.3 1.9 5	2. 2. 5	.5 .76
SODIUM, AS NA, PPM	296. 304. 5	1670. 1960. 5	855. 876. 5	3600. 2220. 5	1510. 1690.
MOLYBDENUM, AS MOD4, PPM			664. 594. 5	1240. 1410. 5	
NITRITE, AS NO2, PPM			273. 366. 5		
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	11.6 17.6 5			11. 17.2
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	11.6 16.9 5			11. 16.9
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	9.9 14.1 5			9. 15.1
SILICA, TOTAL, AS SIO2, PPM	27. 25. 5	128. 139. 5	33. 26. 5	17. 13. 5	119. 124.

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POOR QUALITY ORIGINAL

PG20004220

BI BETZ INDUSTRIAL

The Water Management Division of Betz Laboratories, Inc.

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 06/13/90 BETZ REPRESENTATIVE VELEZ, J. A. 24V	GG LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP A0618044H	AUXJW A0618045H	LUBOLA A0618046H	ACT A0618047H	MAINJW A0618048H
PH	8. 8. 5	8.6 9.7 5	8.2 8.1 5	7. 6.8 5	8.3 8.2 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1880. 1750. 5	4200. 3870. 5	11000. 10000. 5	12000. 7770. 5	3740. 3600. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS		4120. 3640. 5			
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	10. 73. 5	0. 0. 5	0. 0. 5	0. 0. 5
ALKALINITY, "M" AS CACO3, PPM	86. 87. 5	550. 478. 5	218. 358. 5	46. 40. 5	409. 438 5
SULFATE AND SULFITE, AS SO4, PPM	107. 131. 5	137. 138. 5	1200. 985. 5	1430. 1160. 5	140. 162. 5
CHLORIDE, AS CL, PPM	430. 432. 5	427. 417. 5	2720. 2220. 5	3190. 2200. 5	455. 442. 5
HARDNESS, TOTAL, AS CACO3, PPM	139. 138. 5	10.9 10.4 5	788. 467. 5	1020. 771. 5	35. 36. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	116. 114. 5	8.6 8.4 5	659. 413. 5	846. 642. 5	27. 27. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	22. 23. 5	2.2 2.3 5	124. 54. 5	169. 123. 5	8.7 8.7 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	1. .98 5	.24 .38 5	.08 .05 5	.56 .61 5
IRON, TOTAL, AS FE, PPM	1.6 .1 5	1.2 4.1 5	2.3 .79 5	.46 .76 5	3.5 3.4 5
SODIUM, AS NA, PPM	312. 304. 5	955. 885. 5	2330. 2260. 5	2460. 1690. 5	809. 848. 5
MOLYBDENUM, AS MOO4, PPM		724. 664. 5	296. 496. 5		523. 576. 5
NITRITE, AS NO2, PPM		443. 366. 5			
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5			25. 17.2 5	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5			25. 16.9 5	
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5			21. 15.1 5	
SILICA, TOTAL, AS SIO2, PPM	28. 25. 5	25. 26. 5	137. 91. 5	140. 124. 5	35. 32. 5

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POOR QUALITY ORIGINAL

PG20004221

BI BETZ INDUSTRIAL

The Water Management Division of Betz Laboratories, Inc.

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 09/26/90 BETZ REPRESENTATIVE VELEZ, J. A. 24V	JW LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAINJW A1009229H	AUXLUB A1009230H	AUXJW A1009231H	MAKEUP A1009232H	ACT A1009233H
PH	8.9 8.2 5	8.9 9. 5	9.4 9.7 5	7.9 8. 5	7.1 6.9 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	3150. 3700. 5	4140. 9890. 5	3200. 4200. 5	1820. 1760. 5	9640. 7770. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS	3100. 3660. 1	4030. 9680. 5	3130. 4120. 5		
ALKALINITY, "P" AS CACO3, PPM	17. 0. 5	26. 85. 5	34. 73. 5	0. 0. 5	0. 0. 5
ALKALINITY, "M" AS CACO3, PPM	355. 438. 5	654. 1950. 5	355. 550. 5	86. 87. 5	84. 42. 5
SULFATE AND SULFITE, AS SO4, PPM	16.4 162. 5	17.2 219. 5	13.8 138. 5	130. 120. 5	1560. 1160. 5
CHLORIDE, AS CL, PPM	489. 442. 5	454. 421. 5	460. 417. 5	486. 430. 5	3340. 2200. 5
HARDNESS, TOTAL, AS CACO3, PPM	52. 35. 5	24. 34. 5	69. 10.4 5	149. 139. 5	956. 771. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	43. 27. 5	19. 30 5	61. 8.4 5	121. 116. 5	791. 642. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	9.2 8.7 5	5.1 3.8 5	7.4 2.2 5	27. 22. 5	159. 123. 5
COPPER, TOTAL, AS CU, PPM	.35 .61 5	1.4 2.2 5	.54 1. 5	L .05 .05 5	L .05 .05 5
IRON, TOTAL, AS FE, PPM	2.2 3.5 5	1.1 2. 5	2.6 4.1 5	.08 .1 5	.68 .58 5
SODIUM, AS NA, PPM	744. 841. 5	1060. 2600. 5	766. 955. 5	328. 312. 5	2400. 1690. 5
MOLYBDENUM, AS MOO4, PPM	470. 566. 5	842. 1240. 5	481. 724. 5		
NITRITE, AS NO2, PPM			443. 366. 5		
PHOSPHATE, TOTAL, AS PO4, PPM				L .4 .4 5	29. 17.2 5
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM				.3 .2 5	29. 16.9 5
PHOSPHATE, ORTHO- AS PO4, PPM				.3 .2 5	21. 15.1 5
SILICA, TOTAL, AS SIO2, PPM	26. 33. 5	21. 18. 5	21. 26. 5	28. 25. 5	149. 124. 5

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The Water Management Division of Betz Laboratories, Inc.

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 09/26/90 BETZ REPRESENTATIVE VELEZ, J. A. 24V	JV LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	BCT A1009234H	LUBOLA A1009235H	LUBOLB A1009236H		
PH	6.9 5.7 5	8.2 8.1 5	8.8 9. 5		
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	7620. 9260. 5	12300. 10000. 5	8270. 9120. 5		
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			7120. 8780. 5		
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	27. 59. 5		
ALKALINITY, "M" AS CACO3, PPM	53. 18. 5	218. 313. 5	509. 720. 5		
SULFATE AND SULFITE, AS SO4, PPM	1250. 1160. 5	2140. 1200. 5	1500. 673. 5		
CHLORIDE, AS CL, PPM	2490. 2350. 5	3890. 2380. 5	2140. 1730. 5		
HARDNESS, TOTAL, AS CACO3, PPM	717. 925. 5	1020. 583. 5	243. 115. 5		
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	589. 780. 5	869. 499. 5	217. 104. 5		
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	122. 140. 5	140. 74. 5	24. 9.9 5		
COPPER, TOTAL, AS CU, PPM	.05 .05 5	.25 .29 5	.47 .6 5		
IRON, TOTAL, AS FE, PPM	.2 .66 5	1.3 .79 5	2.7 2.8 5		
SODIUM, AS NA, PPM	1750. 2050. 5	3210. 2330. 5	2310. 2500. 5		
MOLYBDENUM, AS MOO4, PPM		366. 438. 5	673. 709. 5		
NITRITE, AS NO2, PPM					
PHOSPHATE, TOTAL, AS PO4, PPM	26. 17.6 5				
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	26. 16.9 5				
PHOSPHATE, ORTHO- AS PO4, PPM	21. 14.1 5				
SILICA, TOTAL, AS SIO2, PPM	133. 139. 5	130. 94. 5	79. 80. 5		

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COPY

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 11/05/90 BETZ REPRESENTATIVE VELEZ, J. A. 24V	LC LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP A1121004H	BCT A1121005H	ACT A1121006H		
PH	7.3 7.9 5	4.3 6.5 5	7.7 7. 5		
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1730. 1750. 5	12100. 8100. 5	10200. 9640. 5		
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	0. 0. 5		
ALKALINITY, "M" AS CACO3, PPM	86. 86. 5	0. 19. 5	153. 46. 5		
SULFATE AND SULFITE, AS SO4, PPM	101. 120. 5	2170. 1250. 5	1350. 1430. 5		
CHLORIDE, AS CL, PPM	432. 430. 5	4160. 2490. 5	3660. 3190. 5		
HARDNESS, TOTAL, AS CACO3, PPM	138. 137. 5	1380. 717. 5	1050. 956. 5		
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	113. 114. 5	1160. 592. 5	884. 791. 5		
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	24. 22. 5	205. 122. 5	161. 159. 5		
COPPER, TOTAL, AS CU, PPM	.05 .05 5	.27 .05 5	.11 .05 5		
IRON, TOTAL, AS FE, PPM	.12 .1 5	2.7 .66 5	.32 .58 5		
SODIUM, AS NA, PPM	308. 320. 5	2830. 1750. 5	2320. 2400. 5		
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	65. 17.6 5	22. 21. 5		
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	55. 16.9 5	19.9 21. 5		
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	53. 14.1 5	16.1 17.2 5		
SILICA, TOTAL, AS SIO2, PPM	28. 28. 5	220. 133. 5	155. 140. 5		

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COPY

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 01/30/91 BETZ REPRESENTATIVE VELEZ, J. A. · 24V	B1 LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	HAKEUP B0205079H	AUXLUB B0205080H	ACT B0205081H	LUBOLA B0205082H	LUBOLB B0205083H
PH	8.1 7.65 4	9.5 9. 4	7.3 7.35 4	8.3 8.05 4	8.7 8.9 4
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1640. 1775. 4	4490. 9885. 4	9800. 11100. 4	11700. 10500. 4	9600. 8120. 4
CORRECTED SPECIFIC CONDUCTANCE, UMHOS		4280. 9680. 4			9290. 7480. 4
ALKALINITY, "P" AS CACO3, PPM	0. 0. 4	50. 75. 4	0. 0. 4	0. 0. 4	29. 31.5 4
ALKALINITY, "M" AS CACO3, PPM	87. 86. 4	669. 1950. 4	64. 65.5 4	306. 265.5 4	538. 516. 4
SULFATE AND SULFITE, AS SO4, PPM	107. 110. 4	L 10. 234. 4	1550. 1505. 4	669. 1215. 4	1500. 782. 4
CHLORIDE, AS CL, PPM	410. 431.5 4	430. 437.5 4	1010. 3500. 4	1140. 2550. 4	854. 1830. 4
HARDNESS, TOTAL, AS CACO3, PPM	142. 138.5 4	56. 37.5 4	1020. 1035. 4	902. 685.5 4	217. 172. 4
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	118. 115. 4	51. 32.5 4	852. 865. 4	785. 579. 4	201. 151.5 4
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	23. 23. 4	4.7 4.5 4	163. 165. 4	111. 101.5 4	13.6 19.05 4
COPPER, TOTAL, AS CU, PPM	L .05 .05 4	.66 2.2 4	.06 .085 4	.4 .245 4	.5 .44 4
IRON, TOTAL, AS FE, PPM	.16 .135 4	.74 1.9 4	.26 .39 4	1.6 1.2 4	2.6 2.15 4
SODIUM, AS NA, PPM	326. 316. 4	1250. 2410. 4	2600. 2430. 4	3300. 2280. 4	2530. 2045. 4
MOLYBDENUM, AS MOO4, PPM		837. 1041. 4		479. 402. 4	630. 691. 4
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 4		15.5 23.5 4		
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 4		15.5 22.45 4		
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 4		12.6 18.55 4		
SILICA, TOTAL, AS SIO2, PPM	23. 28. 4	14. 19.5 4	126. 152. 4	91. 110.5 4	69. 76.5 4

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COPY

04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 04/10/91 BETZ REPRESENTATIVE VELEZ, J. A. 24V	EB LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP B0416042H	ACT B0416043H	AUXLUB B0416044H	BCT B0416045H	LUBOLA B0416046H
PH	8.2 7.9 5	6.8 7.3 5	9.1 9. 5	6.4 5.5 5	8.2 8.2 5
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1660. 1730. 5	9470. 10200. 5	4510. 9880. 5	11200. 13000. 5	8880. 11000. 5
CORRECTED SPECIFIC CONDUCTANCE, UMHOS			4370. 9680. 5		
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	32. 70. 5	0. 0. 5	0. 0. 5
ALKALINITY, "M" AS CACO3, PPM	87. 86. 5	39. 64. 5	673. 1950. 5	42. 18. 5	321. 306. 5
SULFATE AND SULFITE, AS SO4, PPM	116. 107. 5	1660. 1550. 5	126. 198. 5	I 2170. 5	523. 1200. 5
CHLORIDE, AS CL, PPM	379. 431. 5	2970. 3340. 5	402. 430. 5	3750. 4160. 5	2460. 2380. 5
HARDNESS, TOTAL, AS CACO3, PPM	126. 139. 5	1040. 1020. 5	65. 41. 5	1230. 1380. 5	557. 788. 5
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	104. 116. 5	866. 852. 5	54. 35. 5	1020. 1150. 5	488. 659. 5
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	21. 23. 5	163. 163. 5	9.8 4.7 5	194. 205. 5	65. 111. 5
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	.05 .09 5	.67 2.2 5	.06 .11 5	.33 .25 5
IRON, TOTAL, AS FE, PPM	.57 .15 5	.2 .32 5	1.3 1.9 5	.27 .15 5	1.8 1.3 5
SODIUM, AS NA, PPM	284. 320. 5	2430. 2460. 5	1110. 2220. 5	3000. 2830. 5	2350. 2330. 5
MOLYBDENUM, AS MOO4, PPM	L 1.	L 1.	831. 842. 5	L 1.	310. 438. 5
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	10.5 22. 5		13.6 26. 5	
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	9.9 19.9 5		13.3 26. 5	
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	9.8 16.1 5		12.8 21. 5	
SILICA, TOTAL, AS SIO2, PPM	24. 28. 5	172. 149. 5	17. 19. 5	184. 192. 5	86. 91. 5

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The Water Management Division of Betz Laboratories, Inc.

H04143 PACIFIC GAS & ELEC. TOPOCK COMP STAT NEEDLESCA92363	DATE SAMPLED 11/11/91 BETZ REPRESENTATIVE VELEZ, J. A. 24V	LEGEND CURRENT RESULTS XXX.X MEDIAN XXX.X XX NUMBER OF PREVIOUS RESULTS

	SAMPLING POINT				
	MAKEUP B1121162H	BCT B1121163H	ACT B1121164H		
PH	8.2 7.9 5	6.4 6.4 5	7. 7.3 5		
SPECIFIC CONDUCTANCE, 25 DEG C, UMHOS	1250. 1720. 5	12700. 12100. 5	12200. 9800. 5		
ALKALINITY, "P" AS CACO3, PPM	0. 0. 5	0. 0. 5	0. 0. 5		
ALKALINITY, "M" AS CACO3, PPM	87. 86. 5	93. 42. 5	174. 64. 5		
SULFATE AND SULFITE, AS SO4, PPM	115. 113. 5	1960. 2205. 4	1850. 1580. 5		
CHLORIDE, AS CL, PPM	444. 431. 5	4250. 4160. 5	4150. 3340. 5		
HARDNESS, TOTAL, AS CACO3, PPM	139. 138. 5	1080. 1380. 5	1150. 1040. 5		
CALCIUM HARDNESS, TOTAL, AS CACO3, PPM	115. 114. 5	889. 1150. 5	960. 866. 5		
MAGNESIUM HARDNESS, TOTAL, AS CACO3, PPM	23. 23. 5	186. 205. 5	185. 163. 5		
COPPER, TOTAL, AS CU, PPM	L .05 .05 5	.1 .04 5	.1 .06 5		
IRON, TOTAL, AS FE, PPM	.22 .15 5	.42 .27 5	.54 .26 5		
SODIUM, AS NA, PPM	336. 320. 5	3100. 3000. 5	3170. 2430. 5		
PHOSPHATE, TOTAL, AS PO4, PPM	L .4 .4 5	24. 14.1 5	25. 15.5 5		
PHOSPHATE, TOTAL INORGANIC, AS PO4, PPM	L .2 .2 5	20. 13.4 5	20. 15.5 5		
PHOSPHATE, ORTHO- AS PO4, PPM	L .2 .2 5	19.4 12.8 5	17.6 12.6 5		
SILICA, TOTAL, AS SIO2, PPM	27. 28. 5	225. 192. 5	212. 155. 5		

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PG20004225

HORNKOHL LA[illegible]ATORIES

ANALYSES OF OIL, WATERS, [illegible]ILS, OIL CORES

[illegible]phone 8-8367

[illegible] O. Box 1673

714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

[illegible] 21, 1951

[illegible]oratory No. 62692

[illegible]ple Water

Marked Drinking Fountain
Topock Station Machine Shop

[illegible]d December 28, 1951

[illegible]tted by Pacific Gas & Electric Co.
P.O. Box 438, Barstow, Calif. . . . . .

COMPLETE SANITARY CHEMICAL WATER ANALYSIS

Constituents		Parts per Million	Grains per Gallon	Domestic Water Classification
Carbonates	CO_3	0.0	0.00	Good
Bicarbonates	HCO_3	108.6	6.35	Good
Chlorides	Cl	794.5	[illegible]	High
Sulfates	SO_4	147.4	8.62	Good
[illegible]	[illegible]	0.0	0.00	Good
Calcium	Ca	100.0	5.85	Good
Magnesium	Mg	9.7	0.57	Good
Sodium	Na	493.3	28.85	Fair
Ammonia		Trace		Good
Nitrites		Negative		Good
Nitrates		17.0		Good
Iron		0.70		High
Hardness as $CaCO_3$		290.0	16.96	Medium Hard
Total Solids @ 105°C.		1598.5	93.48	High

pH — 7.6

Color: Slightly straw
Odor: None
Turbidity: Clear

Conductivity: $\times 10^5$ @ 25°C. — 416.0

Theoretical Analysis

Calcium Bicarbonate	144.3	8.44
Calcium Sulfate	204.2	11.94
Calcium Chloride	12.2	0.71
Magnesium Chloride	38.1	2.23
Sodium Chloride	1253.9	73.33

REMARKS: The high Iron and high Chloride contents would tend to make the water somewhat disagreeable to the taste, and on persons consuming it for the first ti e might cause a physiological reaction.

Respectfully submitted,
HORNKOHL LABORATORIES
[signature]

TOP A1 0004677

POOR QUALITY ORIGINAL

PG20004497

Tel. 8 9997

P. O. Box 817

HORNKOHL LABORATORIES

CHEMICAL AND TESTING ENGINEERS
714 Truxtun Avenue
Bakersfield, California

January 17, 1957

Laboratory No. 09[illegible]

Marked Colorado River Water
Topaz PG&E Comp. Station

Sample Water

Received January [illegible], 1957

Submitted by Pacific Gas and Electric Company
Box [illegible]
[illegible] Street Annex
Bakersfield, California

[illegible] WATER ANALYSIS

Constituents	Parts Per Million	Grains Per Gallon
Carbonates	0.[illegible]	0.00
Bicarbonates	161.0	9.41
Chlorides	[illegible]	6.63
Sulfates	403.2	23.58
Sulfides	[illegible]	0.00
Calcium	[illegible]	6.22
Magnesium	29.3	1.71
Sodium	150.0	8.77
Iron	[illegible]	
Hardness as Cases	[illegible]	22.57
Total Solids @ 1[illegible]	[illegible]	[illegible]1.46
Total Solids @ Red Heat	[illegible]	47.95

pH: [illegible]
Color: Water White
Odor: Stale
Turbidity: Clear
Conductivity: Mhos/cm3x1[illegible] 25°C: [illegible]

THEORETICAL ANALYSIS

Calcium Bicarbonate	214.0	12.51
Calcium Sulfate	19[illegible].4	10.67
Magnesium Sulfate	14[illegible]	8.45
Sodium Sulfate	[illegible]	13.79
Sodium Chloride	187.1	1[illegible].94

Respectfully submitted,

HORNKOHL LABORATORIES

Frank Hornkohl

mk

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FOOR QUALITY ORIGINAL

PG20005131

TEL. 3-6887 W. P. Walker P. O. BOX 667

HORNKOHL LABORATORIES

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

January 17, 1957

Laboratory No. 23355 *Marked* Santa Fe Well
Topack PG&E Camp Station

Sample Water

Received January 14, 1957

Submitted by The Pacific Gas and Electric Company
Box 3246
H Street Annex
Bakersfield, California

COMPLETE INDUSTRIAL WATER ANALYSIS

Constituents	Parts Per Million	Grains Per Gallon
Carbonates	0.0	0.00
Bicarbonates	115.9	6.78
Chlorides	200.0	11.70
Sulfates	84.5	4.94
Sulfides	0.0	0.00
Calcium	31.2	1.82
Magnesium	4.9	0.29
Sodium	168.8	9.87
Iron	0.1	
Hardness as $CaCO_3$	98.0	5.73
Total Solids - 105°C:	545.0	31.87
Total Solids - Red Heat	505.0	29.53

pH: 7.3
Color: Water White
Odor: None
Turbidity: Clear
Conductivity: Mhos/cm³x10⁵-25°C: 97.2

THEORETICAL ANALYSIS

Calcium Bicarbonate	126.4	7.39
Magnesium Bicarbonate	24.9	1.46
Magnesium Sulfate	3.6	0.21
Sodium Sulfate	120.7	7.06
Sodium Chloride	329.7	19.28

Respectfully submitted,

HORNKOHL LABORATORIES

Frank Hornkohl

mk

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TOP A1 00047005

POOR QUALITY ORIGINAL

TEL. PAISTON 7-8867

P.O. BOX 887

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD CALIFORNIA

November 1, 1961

Laboratory No. 129,863

Marked New Well, Topock Compression Station

Sample Water

Received October 30, 1961

Submitted by Pacific Gas & Electric Co.
P. O. BOX 3246 Annex
Bakersfield, California

INDUSTRIAL WATER ANALYSIS

Constituents	Parts per Million	Grains per Gallon
Carbonates	0.0	0.00
Bicarbonates	111.0	6.49
Chlorides	226.9	19.12
Sulfates	126.7	7.41
Sulfides	0.0	0.00
Nitrates	1.2	0.07
Calcium	64.0	3.74
Magnesium	19.0	1.11
Sodium	205.2	12.00
Iron	0.1	0.01
Hardness as $CaCO_3$	238.0	13.92
Total Solids @ 105°C.	852.8	49.87

pH - - - - - : 7.9
Color : Water White
Odor : None
Turbidity : Slightly turbid
Conductivity: Mhos/cm^3 x 10^5 @ 25°C. = 133.3

HYPOTHETICAL ANALYSIS

Calcium bicarbonates	147.5	8.63
Calcium sulfate	93.9	5.49
Magnesium sulfate	75.8	4.43
Magnesium chloride	14.3	0.84
Sodium chloride	521.5	30.50

Remarks: See attached.

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

Frederick Fischer

Frederick Fischer, Chief Chemist

FF:ee

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TOP A1 0004770 40

POOR QUALITY ORIGINAL

TEL. FAIRVIEW 7-6667 P. O. BOX 867

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD CALIFORNIA

November 1, 1961

Laboratory No. 129,862 *Marked* New Well, Topock Compression Station

Sample Water

Received October 31, 1961

Submitted by Pacific Gas & Electric Co.
Box 488
Barstow, California

DOMESTIC WATER ANALYSIS

Constituents	Parts per Million	Grains per Gallon	Classification
Carbonates	0.0	0.00	Good
Bicarbonates	105.5	6.17	Good
Chlorides	400.0	23.39	See Remarks
Sulfates	111.4	6.51	Good
Sulfides	0.0	0.00	Good
Ammonia	Trace	Trace	Good
Nitrites	Negative	Negative	Good
Nitrates	17.6	1.03	Good
Calcium	41.2	2.41	Good
Magnesium	12.4	0.73	Good
Sodium	281.8	16.48	Good
Iron	0.1	0.01	Good
Hardness as $CaCO_3$	154.0	9.01	Medium Hard Water
Total Solids @ 105°C.	917.3	53.64	

pH - - - - - - 7.8
Conductivity: $mhos/cm^3 \times 10^5$ @ 25°C. = 117.6
Color : Water White
Odor : None
Turbidity : None

HYPOTHETICAL ANALYSIS

Calcium bicarbonate	140.2	8.20
Calcium sulfate	22.5	1.32
Magnesium sulfate	61.4	3.59
Sodium sulfate	68.9	4.03
Sodium chloride	659.4	38.56

REMARKS: From a chemical standpoint, this water would be classified as satisfactory for domestic use. The chlorides are in excess of the 250 parts per million presently recommended by the Public Health Drinking Water Standards. However, this constituent frequently is in excess in this area without any apparent ill effect.

The attached bacteriological report shows no contamination by organisms of the soil aerogenes group and would thus satisfy the Public Health requirements in this respect also.

Respectfully submitted,
HORNKOHL LABORATORIES, INC.
[illegible]
[illegible]

[illegible]

TOP A3 0005 0377

POOR QUALITY ORIGINAL

TEL FAIRVIEW 7-2907 P O BOX 947

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD CALIFORNIA

November 1, 1961

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH
APPROVED WATER LABORATORY

Laboratory No. 129,862
Sample Water
Received October 30, 1961
Submitted by Pacific Gas & Electric Co.
P. O. Box 3246 Annex
Bakersfield, California (Pipeline Operator Division)

BACTERIOLOGICAL EXAMINATION

DATE AND HOUR COLLECTED
COLLECTED BY
ORIGINAL SOURCE New Well
POINT SAMPLE OBTAINED Topock Compression Station

	LACTOSE BROTH 24 HOURS	LACTOSE BROTH 48 HOURS	BILE BROTH 24 HOURS	BILE BROTH 48 HOURS
10 CC SAMPLES				
No 1	Negative	Negative		
No 2	Negative	Negative		
No 3	Negative	Negative		
No 4	Negative	Negative		
No 5	Negative	Negative		
1 CC SAMPLE				
No 1				
0.1 CC SAMPLE				
No 1				

M.P.N. Less than 2.2

TOTAL BACTERIA COUNT (PLATE COUNTER POURED) 8,600

COLOR Water White
ODOR None
TURBIDITY Clear

REMARKS: Submitted in private container.

REPRESENTATIVE SUBMITTED
HORNKOHL LABORATORIES, INC.

Frederick Fischer, Chief Chemist

FF:es

TOP A3 0005 0034

POOR QUALITY ORIGINAL

PG20004900

TEL. FAIRVIEW 7-8566 P. O. BOX 667

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

June 24, 1964

LABORATORY NO. -146,812

RECEIVED June 22, 1964

SUBMITTED BY Pacific Gas & Electric
P. O. Box 988
Barstow, California Attn: C. A. Miller

SAMPLE MARKED
Sample from New Topockwell, June 8
WELL #6

DOMESTIC WATER ANALYSIS

CONSTITUENTS	PARTS PER MILLION	GRAINS PER GALLON	CLASSIFICATION
Carbonates (CO_3)	0.0	0.00	Good
Bicarbonates (HCO_3)	228.8	13.38	Good
Chlorides (Cl)	1496.4	87.51	Gab
Sulfates (SO_4)	636.0	37.19	Poor
Sulfides (S)	0.0	0.00	Good
Ammonia (NH_3)	TRACE	TRACE	Good
Nitrites (NO_2)	NEGATIVE	NEGATIVE	Good
Nitrates (NO_3)	48.5	2.84	Bad
Calcium (Ca)	382.4	22/36	Very Hard
Magnesium (Mg)	69.3	4.05	Fair
Sodium (Na)	822.0	48.01	Too High
Iron (Fe)	0.1	0.01	Good
Hardness in $CaCO_3$	1240.0	72.52	Too High
Total Solids @ 105°C	3601.6	210.62	Too High
pH	7.7		Good
Conductivity Mhos/cm x10⁵ @ 25°C	490.2		Bad
Color	Yellow, due to Chromates		
Odor	None		
Turbidity	Clear		
Chromates	32.5	1.90	Bad

THEORETICAL ANALYSIS

Calcium Bicarbonate	303.9	17.77
Calcium Sulfate	901.9	52.74
Calcium Nitrate	63.9	3.74
Calcium Chromate	43.7	2.56
Calcium Chloride	43.3	2.53
Magnesium Chloride	270.4	15.81
Sodium Chloride	2089.4	112.19

REMARKS: This water, as shown by the classification column above, is unfit for domestic use of any kind; nor would we suggest using it for industrial use.

Respectfully submitted,
HORNKOHL LABORATORIES, INC.,

Technical Director

mk STATE OF CALIFORNIA, DEPARTMENT OF PUBLIC HEALTH, APPROVED WATER LABORATORY

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TOP A1 0004 7706

POOR QUALITY ORIGINAL

WATER ANALYSIS REPORT
BROWN AND CALDWELL LABORATORIES

For Pacific Gas & Electric Co - Dept. of Eng. Research — Anal. No. 6521

Report to Mr. R. A. McLellan — Date Collected not given

Copies to Mr. W. Culver — Date Received 2-04-66

Source of Sample Topock Well Water — Date Reported 2-15-66

ANIONS	MILLIGRAMS PER LITER	MILLIEQUIV. PER LITER	DETERMINATION	MILLIGRAMS PER LITER	DETERMINATION	MILLIGRAMS PER LITER
Nitrate (NO_3)	1	0.02	Phenolphthalein Alkalinity ($CaCO_3$)	0	Silica (SiO_2)	25
Chloride (Cl)	2500	70.53	Methyl Orange Alkalinity ($CaCO_3$)	124	Iron (Fe)	0.05
Sulfate (SO_4)	1064	22.15	Free Carbon Dioxide (CO_2)		Manganese (Mn)	less than 0.05
Bicarbonate (HCO_3)	151	2.47	Calcium Hardness ($CaCO_3$)	1340	Aluminum (Al)	
Carbonate (CO_3)	0	0.00	Magnesium Hardness ($CaCO_3$)	180	Boron (B)	
Total Milliequivalents per Liter		95.17	Total Hardness ($CaCO_3$)	1520	Fluoride (F)	2.2
CATIONS	MILLIGRAMS PER LITER	MILLIEQUIV. PER LITER	Dissolved Residue - Calculated	5734		
Sodium & Potassium	1490	64.80	Dissolved Residue - Evaporated	5796		
Magnesium (Mg)	44	3.62	Loss on Ignition			
Calcium (Ca)	536	26.75	Total Fixed Residue			
Total Milliequivalents per Liter		95.17	Sp. Cond.-Micromhos 25° C	9333	Hyd. Ion Conc. (pH)	7.9

Comments: LD No. 881292

Chromate content 12.5 ppm (Hexavalent Chromium)

mg = [illegible] g mg/l = ppm
g [illegible] = mg
g/l [illegible] = ppm

Analyst V. A. Coquille — Reported by James D. Tyler

BROWN AND CALDWELL LABORATORIES • 88 MINT STREET, SAN FRANCISCO 3, CALIFORNIA

TOP F 07-00-07-77

POOR QUALITY ORIGINAL

PG20018739

TEL. FAIRVIEW 7-8567

P.O. BOX 867

HORNKOHL LABORATORIES, Inc.
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

June 27, 1966

Laboratory No. 167953 Marked Topock Compress Station 6-16-66

Sample Water well #6

Received June 22, 1966

Submitted by Pacific Gas and Electric Company
P. O. Box 488
Barstow, California 92311
Attn: R. W. Horton

* * * * * * *

[illegible] WATER ANALYSIS

Constituents:		Parts per Million	Grains per Gallon
Carbonates, CO_3	---	0.0	0.00
Bicarbonates, HCO_3	---	154.3	9.02
Chlorides, Cl	---	2462.2	145.16
Sulfates, SO_4	---	871.2	50.95
Sulfides, S	---	0.0	0.00
Nitrates, NO_3	---	67.0	3.92
Phosphates, PO_4	---	0.0	0.00
Calcium, Ca	---	447.2	26.15
Magnesium, Mg	---	61.5	3.60
Sodium, Na	---	1455.4	85.11
Iron, Fe	---	0.1	0.01
Hardness as $CaCO_3$	---	1370.0	80.12
Total Solids @ 105°C.	---	5461.7	319.40

pH-Value	--	:	7.5
Color	--	:	Green
Odor	--	:	None
Turbidity	--	:	Clear
Conductivity: K x 10^5 @ 25°C.		:	1099.0

Theoretical Analysis

Calcium Bicarbonate	---	205.1	11.99
Calcium Sulfate	---	1235.5	72.25
Calcium Chloride	---	93.2	5.45
Magnesium Chloride	---	240.0	14.04
Sodium Chloride	---	3699.3	216.34
Sodium Nitrate	---	9.2	0.54

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

Frank Hornkohl
Technical Director

FHiap

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TOP F 0 1 8 9 1 4

POOR QUALITY ORIGINAL

TEL. FAIRVIEW 7-8566

P. O. BOX 867

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

January 15, 1966

LABORATORY NO. 186814

RECEIVED January 11, 1966

SUBMITTED BY Pacific Gas and Electric Company
P. O. Box 488
Barstow, California 92311
Attn: R.W. Horton

SAMPLE MARKED Arizona Well #1, 1-5-66.

Purchase Order LO-65.3143

DOMESTIC WATER ANALYSIS

CONSTITUENTS	PARTS PER MILLION	GRAINS PER GALLON	CLASSIFICATION
Carbonate (CO_3)	0.0	0.00	Good
Bicarbonate (HCO_3)	127.2	7.20	Good
Chloride (Cl)	256.7	15.00	Fair
Sulfate (SO_4)	99.8	5.84	Good
Sulfide (S)	0.0	0.00	Good
Ammonia (NH_3)	Trace	Trace	Good
Nitrite (NO_2)	0.0	0.00	Good
Nitrate (NO_3)	10.0	0.63	Good
Calcium (Ca)	36.4	2.13	Good
Magnesium (Mg)	7.8	0.46	Good
Sodium (Na)	204.2	11.94	Good
Iron (Fe)	0.2	0.01	Good
Silica, Si	27.5	1.61	Good
Hardness as $CaCO_3$	123.1	7.19	Fair
Total Solids @ 103°C	708.5	41.46	Fair
pH	—	7.8	Good
Conductivity Micromhos $\times 10^5$ @ 25°C	—	137.9	Good
Color	—	Water White	
Odor	—	None	
Turbidity	—	Clear	
Fluoride - F	4.3	0.23	Should not exceed 1 ppm.
Magnesium, Mg	[illegible]	---	Good

Theoretical Analysis

Calcium Bicarbonate	147.5	8.62
Magnesium Bicarbonate	14.6	0.85
Magnesium Sulfate	26.5	1.55
Sodium Sulfate	116.5	6.81
Sodium Chloride	423.3	24.75

Remarks: As noted by the classification column, the Chlorides, Fluoride, Hardness and Total Solids are above the recommendations of the State Department of Public Health.

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

John D. Pickel, Chief Chemist

108:[illegible]

STATE OF CALIFORNIA, DEPARTMENT OF PUBLIC HEALTH, APPROVED WATER LABORATORY

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TOP 00000000

POOR QUALITY ORIGINAL

[illegible] P. O. BOX 667

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD CALIFORNIA

January 15, 1968

LABORATORY NO. 188805

SAMPLE MARKED

RECEIVED January 11, 1968

Arizona Well #2, 1-5-68.

SUBMITTED BY Pacific Gas and Electric Company
P. O. Box 488
Barstow, California 92311

Purchase Order #LO-893141

Attn: R. W. Horton

DOMESTIC WATER ANALYSIS

CONSTITUENTS		PARTS PER MILLION		GRAINS PER GALLON		CLASSIFICATION
Carbonate (CO_3)	–	0.0	–	0.00	–	Good
Bicarbonates (HCO_3)	–	107.4	–	6.28	–	Good
Chlorides (Cl)	–	351.1	–	20.53	–	High
Sulfates (SO_4)	–	135.4	–	7.92	–	Good
Sulfides (S)	–	0.0	–	0.00	–	Good
Ammonia (NH_3)	–	Trace	–	Trace	–	Good
Nitrites (NO_2)	–	0.0	–	0.00	–	Good
Nitrates (NO_3)	–	9.6	–	0.56	–	Good
Calcium (Ca)	–	45.2	–	2.64	–	Good
Magnesium (Mg)	–	6.8	–	0.40	–	Good
Sodium (Na)	–	268.2	–	15.68	–	Good
Iron (Fe)	–	0.76	–	0.04	–	High
Silica, Si	–	25.0		1.46		Good
Hardness as $CaCO_3$	–	141.0	–	8.25	–	Fair
Total Solids @ 103°C	–	899.8	–	52.62	–	High
pH	–	–	7.9			Good
Conductivity Mhos/cm x10^5 @ 25°C	–	–	166.7			Fair
Color	–	–	Pale Straw			
Color	–	–	Nine			
Turbidity	–	–	Clear (slight sediment)			
Fluorides, F	–	4.0		0.23		Should not exceed 1 p
Manganese, Mn	–	0.00		---		Good

Theoretical Analysis

Calcium Bicarbonate	–	142.6	8.34
Calcium Sulfate	–	34.0	1.99
Magnesium Sulfate	–	33.7	1.97
Sodium Sulfate	–	125.0	7.31
Sodium Chloride	–	578.[illegible]	33.85

Remarks: As noted by the classification column above, the Chlorides, Iron, Hardness, Total Solids, and Fluorides are well above the recommendations of the State Department of Public Health

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

Heinz D. Pickel, Chief Chemist

HDP: p

STATE OF CALIFORNIA, DEPARTMENT OF PUBLIC HEALTH, APPROVED WATER LABORATORY

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TOP A1 0004380

TEL. FAIRVIEW 7-5887

P.O. BOX 887

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD CALIFORNIA

January 15, 1968

Laboratory No. 188806
Sample Water
Received January 11, 1968
Submitted by Pacific Gas and Electric Company
P. O. Box 488
Barstow, California 92311
Attn: R. W. Horton

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH
APPROVED WATER LABORATORY

Purchase Order #LO-893141

BACTERIOLOGICAL EXAMINATION

DATE AND HOUR COLLECTED January 5, 1968
COLLECTED BY R. F. Jacobs
ORIGINAL SOURCE Well
POINT SAMPLE OBTAINED [illegible]

	LACTOSE BROTH 24 HOURS	LACTOSE BROTH 48 HOURS	BILE BROTH 24 HOURS	BILE BROTH 48 HOURS
10 CC SAMPLES				
No 1	Negative	Negative	—	
No 2	Negative	Negative	—	
No 3	Negative	Negative	—	
No 4	Negative	Negative	—	
No 5	Negative	Negative	—	
1 CC SAMPLE				
No 1			—	
0.1 CC SAMPLE				
No 1			—	

MPN Less than 2.2/100 ml.

TOTAL BACTERIA COUNT (PLATE COUNT/24 HOURS) 7900

COLOR Water White
ODOR None
TURBIDITY Clear

RESPECTFULLY SUBMITTED
HORNKOHL LABORATORIES, INC.

Helen H. Pickel, Chief Chemist

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TOP A3 00005011

POOR QUALITY ORIGINAL

REVIEW 7-4947 P. O. BOX 647

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

January 15, 1968

Laboratory No. 188807
Sample Water
Received January 11, 1966
Submitted by Pacific Gas and Electric Company
P. O. Box 488
Barstow, California 92311
Attn: R. W. Horton

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH
APPROVED WATER LABORATORY

Purchase Order #LO-893141

BACTERIOLOGICAL EXAMINATION

DATE AND HOUR COLLECTED January 5, 1968
COLLECTED BY R. P. Jacobs
ORIGINAL SOURCE Well
POINT SAMPLE OBTAINED Arizona Well #2

	LACTOSE BROTH 24 HOURS	LACTOSE BROTH 48 HOURS	SILK BROTH 24 HOURS	SILK BROTH 48 HOURS
10 cc. SAMPLES				
No. 1	Negative	Negative	—	
No. 2	Negative	Negative	—	
No. 3	Negative	Negative	—	
No. 4	Negative	Negative	—	
No. 5	Negative	Negative	—	
1 cc. SAMPLE				
No. 1			—	
0.1 cc. SAMPLE				
No. 1				

MPN Less than 2.2/100 ml.

TOTAL BACTERIA COUNT (PLATE COUNT/24 HOURS) 9000

COLOR Water White
ODOR None
TURBIDITY Slight Residue

RESPECTFULLY SUBMITTED
HORNKOHL LABORATORIES, INC.

Heinz D. Pickel, Chief Chemist

HDP:ap

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TOP A3 0005160

TEL. 327 8367

ATTACHMENT "C"

P.O. BOX 867

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

RECEIVED
Pipe Line Operations Dept.
Hinkley Compressor Station
OCT 4 - 1968

Laboratory No. 193151 through - 154 September 30, 1968 *Marked* As shown below

Sample Water

Received September 20, 1968

Purchase Order #LO 811709

Submitted by Pacific Gas & Electric Company
P. O. Box 486
Barstow, California 92311
Attn: R. W. Horton

*After SO_2 treatment
Well Nº 3 & 4 makeup
to towers.-ARIZONA WELLS

* * * * * * *

CHEMICAL ANALYSIS OF WATER

Constituents		Amount in Parts per Million			
	*	Sludge Pit #1	* Sludge Pit #2	New Well #3	New Well #4
Carbonate, CO_3	---	0.0	0.0	0.0	0.0
Hydrate, OH	---	0.0	0.0	0.0	0.0
Bicarbonate, HCO_3	---	0.0	0.0	366.6	150.1
Chloride, Cl	---	1750.0	1759.0	133.0	195.7
Sulfate, SO_4	---	1152.0	1110.0	9.0	91.2
Sulfide, S	---	0.0	0.0	0.0	0.0
Arsenic, As	---	Trace	Trace	Trace	Trace
Boron, B	---	2.0	2.40	0.86	0.90
Nitrate, NO_3	---	58.2	45.0	12.4	7.6
Calcium, Ca	---	232.4	219.2	46.6	27.2
Magnesium, Mg	---	94.0	24.0	6.8	6.8
Sodium, Na	---	1403.0	1394.0	276.2	103.1
Iron, Fe	---	0.07	0.17	0.14	0.08
Hardness as $CaCO_3$	---	640.0	650.0	150.0	96.0
Total Dissolved Solids		4676.0	4640.0	614.7	596.3
Fluorine, F	---	16.00	13.40	4.80	3.20

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TOP F

POOR QUALITY ORIGINAL

PG20018647

TEL. FAIRVIEW 7-8567

P. O. BOX 867

HORNKOHL LABORATORIES, INC.
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

Lab. No. 193151 thr. - 154

Constituents:		Amount in Parts per Million			
		Sludge Pit #1	Sludge Pit #2	New Well #3	New Well #4
Manganese, Mn	---	0.03	0.02	0.03	0.02
Potassium, K	---	46.8	45.9	8.4	6.3
Arsenic, As	---	0.05	0.05	0.02	0.02
Phosphate, P_2O_5	---	2.5	2.7	0.3	0.0
Phenols	---	(-) 0.01	(-) 0.01	(-) 0.01	(-) 0.01
Zinc, Zn	---	1.46	1.48	(-) 0.01	(-) 0.01
Copper, Cu	---	0.02	0.05	0.02	0.02
Cadmium, Cd	---	(-) 0.01	(-) 0.01	(-) 0.01	(-) 0.01
Chromium, Cr	---	14.41	13.61	0.06	0.02
Lead, Pb	---	0.06	0.03	(-) 0.01	(-) 0.01
Tin, Sn	---	(-) 0.01	(-) 0.01	(-) 0.01	(-) 0.01
Aluminum, Al	---	(-) 0.01	(-) 0.01	(-) 0.01	(-) 0.01
Color	---	Pale Straw	Pale Straw	Water White	Water White
Odor	---	Slightly Musty	Slightly Musty	None	None
Turbidity	---	Clear	Clear	Clear	Clear
pH-Value at 25°C.	---	3.4	3.5	7.6	7.9
Resistivity @ 25°C., Ohm Meters	---	1.65	1.[illegible]	6.05	9.75
Conductivity, K x 10^5 @ 25°C.	---	606.1	6[illegible].1	150.4	102.6

Note: If there are any questions in regard to the quality and the physical state of subject waters please do not hesitate to call this laboratory for any information desired.

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

Heinz D. Pickel, Chief Chemist

HDP:ar

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TOP F 0 1 0 0 0 7 7

POOR QUALITY ORIGINAL

TEL 327-8567 P.O. BOX 867

HORNKOHL LABORATORIES, Inc.
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

[illegible] 1966

Laboratory No. [illegible]

Sample Water

Received October [illegible], [illegible]

Submitted by Pacific Gas & Electric Company
P. O. Box [illegible]
Barstow, California 92311
Attn: [illegible]

Marked 1/[illegible] Upstream Topock Plant, Colorado River, 10-22-68.

Purchase Order #LO 811717

****

CHEMICAL ANALYSIS OF WATER

Constituents:		Amount in Parts per Million
Carbonates, CO_3	—	0.0
Bicarbonates, HCO_3	—	146.8
Chlorides, Cl	—	101.4
Sulfates, SO_4	—	374.4
Sulfides, S	—	0.0
Boron, B	—	0.09
Nitrates, NO_3	—	2.4
Calcium, Ca	—	80.8
Magnesium, Mg	—	30.3
Sodium, Na	—	151.3
Iron, Fe	—	0.1
Hardness as $CaCO_3$	—	326.0
Total Dissolved Solids	—	815.1
Fluorides, F	—	0.40
Manganese, Mn	—	0.01
Potassium, K	—	6.60
Arsenic, As	—	0.00

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TEL FAIRVIEW 7-6567

P.O. BOX 667

HORNKOHL LABORATORIES, INC.
CHEMICAL AND TESTING ENGINEERS
716 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

Lab. No. 193633

Page two

Constituents:		Amount in Parts per Million
Phosphate, P_2O_5	---	0.00
Phenols	---	0.00
Zinc, Zn	---	0.00
Copper, Cu	---	0.00
Cadmium, Cd	---	0.00
Chromium, Cr	---	0.10
Lead, Pb	---	0.00
Tin, Sn	---	0.00
Aluminum, Al	---	0.00

Color	--	Water White
Odor	--	None
Turbidity	--	Clear
pH-Value @ 25°C.	--	7.9
Resistivity @ 25°C., Ohm Meters	--	11.0
Conductivity, K x 10^5 @ 25°C.	--	90.9

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

Helen D. Pickell, Chief Chemist

HDP:ap

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HORNKOHL LABORATORIES, Inc.
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

January 4, 1969

Laboratory No. 194599

Marked Southern California Well, Mile 4, 96 feet to Water.

Sample Water

Purchase Order #LO 811740

Received December 20, 1968

Submitted by Pacific Gas and Electric Company
P. O. Box 488
Barstow, California 92311
Attn: R. W. Norton, Pipe Line Operations

* * * * * * *

INDUSTRIAL WATER ANALYSIS

Constituents:		Parts per Million	Grains per Gallon
Carbonates, CO_3	—	0.0	0.00
Bicarbonates, HCO_3	—	72.0	4.21
Chlorides, Cl	—	126.2	7.38
Sulfates, SO_4	—	109.4	6.40
Sulfides, S	—	0.0	0.00
Nitrates, NO_3	—	Trace	Trace
Silica, SiO_2	—	10.0	0.58
Calcium, Ca	—	25.6	1.50
Magnesium, Mg	—	7.3	0.43
Sodium, Na	—	118.2	6.91
Iron, Fe	—	0.1	0.01
Chromium, Cr	—	(-) 0.01	(-) 0.01
Hardness as $CaCO_3$	—	94.0	5.50
Total Solids @ 105°C.	—	432.7	25.30

pH-Value — 7.3
Conductivity: K x 10^5 @ 25°C. — 55.2

Color : Water White
Odor : None
Turbidity : Clear

Theoretical Analysis

Calcium Bicarbonate	—	95.6	5.59
Calcium Sulfate	—	6.0	0.40
Magnesium Sulfate	—	36.1	2.11
Sodium Sulfate	—	112.2	6.56
Sodium Chloride	—	208.1	12.17

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

EDF:ap

Reina D. Pickel, Chief Chemist

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POOR QUALITY ORIGINAL

PG2002578(

TELEPHONE (805) 327-8567

P.O. BOX 667

HORNKOHL LABORATORIES, Inc.
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA 93302

September 21, 1970

Laboratory No. 205073

Sample Waste Water

Received September 8, 1970

Submitted by Pacific Gas and Electric Company
P. O. Box 337
Needles, California 92363
Attn: W. V. Adler

Marked From Waste Disposal System at Topock Compressor Station (Injection Water)

Purchase Order #Lo 821153

* * * * * * *

SPECIAL STATE WATER ANALYSIS

Constituents:		Parts per Million	Grains per Gallon
Carbonates, CO_3	—	19.2	1.12
Bicarbonates, HCO_3	—	39.0	2.28
Chlorides, Cl	—	3305.0	193.28
Sulfates, SO_4	—	1320.0	77.19
Sulfides, S	—	0.0	0.00
Calcium, Ca	—	400.0	23.39
Magnesium, Mg	—	19.5	1.14
Sodium, Na	—	2309.0	135.03
Potassium, K	—	59.40	3.47
Boron, B	—	3.97	0.23
Silica, SiO_2	—	35.0	2.05
Total Dissolved Solids	—	7495.5	438.34

pH-Value @ 25°C.	—	8.8
Conductivity: EC x 10^5 @ 25°C.	—	1250.0
Resistivity: Ohm Meters @ 25°C-	—	0.80

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

E. R. Starbuck, Jr.

E. R. Starbuck, Jr.,
Assistant Chief Chemist

ay

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POOR QUALITY ORIGINAL

PG20025976

TELEPHONE (805) 327-9547

P.O. BOX 947

HORNKOHL LABORATORIES, Inc.
CHEMICAL AND TESTING ENGINEERS
716 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA 93305

August 31, 1972

Laboratory No. 217157 *Marked* B Tower

Sample Water Purchase Order #LO 842005

Received August 10, 1972

Submitted by Pacific Gas & Electric Co.
Attention: R. P. Jacobs
P.O. Box 488
Barstow, California 92311

* * * * * * *

INDUSTRIAL WATER ANALYSIS

Constituents		Parts per Million	Grains per Gallon
Carbonates, CO_3	—	0.0	0.00
Bicarbonates, HCO_3	—	20.7	1.21
Chlorides, Cl	—	199.3	11.65
Sulfates, SO_4	—	1,230.0	71.93
Sulfides, S	—	0.0	0.00
Ammonia, NH_3	—	Trace	Trace
Nitrites, NO_2	—	Trace	Trace
Nitrates, NO_3	—	31.5	1.53
Calcium, Ca	—	171.2	10.01
Magnesium, Mg	—	59.1	3.46
Sodium, Na	—	287.5	16.81
Iron, Fe (Total)	—	0.48	0.03
Fluorides, F	—	4.63	0.27
Manganese, Mn	—	0.01	0.00
Potassium, K	—	14.50	0.85
Hardness as $CaCO_3$	—	1,100.0	64.33
Total Dissolved Solids	—	2,297.0	134.33
Boron, B	—	0.42	0.02
Silica, SiO_2	—	58.05	3.39
Chromium, Cr (Hexavalent)	—	0.0	0.00
Cyanide, CN^-	—	0.0	0.00
Lead, Pb	—	0.0	0.00
Silver, Ag	—	0.0	0.00
Total Filterable Residue	—	11.4	0.66

pH-Value @ 25°C. — 7.53
Conductivity: Micromhos/cm @ 25°C. — 2,173.9
Resistivity: Ohm Meters @ 25°C. — 4.6

Color : Light Pale Straw
Odor : None
Turbidity: Clear

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

Robert E. Whitlach

Robert E. Whitlach
Chief Chemist

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TOP G1

TELEPHONE (305) 327-8367

P.O. BOX 867

HORNKOHL LABORATORIES, Inc.
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA 93302

March 24, 1975

Laboratory No. 240202 *Marked* Pond #2

Sample Water

Received March 14, 1975

Submitted by Pacific Gas & Electric
P.O. Box 337
Needles, CA 92363
ATTN: J. R. Lackey

* * * * * *

INDUSTRIAL WATER ANALYSIS

Constituents	Parts per Million	Grains per Gallon
Carbonates, CO_3	50.4	2.95
Bicarbonates, HCO_3	61.0	3.57
Chloride, Cl	6879.2	402.30
Sulfates, SO_4	4632.0	270.88
Sulfides, S	0.0	0.00
Nitrates, NO_3	24.8	1.45
Silica, SiO_2	84.6	4.94
Boron, B	2.9	0.17
Calcium, Ca	440.0	25.73
Magnesium, Mg	53.7	3.14
Sodium, Na	6145.1	359.37
Iron, Fe	under 0.10	0.01
Hardness as $CaCO_3$	1320.0	77.19
Total Dissolved Solids	19098	1115.71

pH-Value @ 25°C. 8.98
Conductivity: Micromho/cm @ 25°C. —
Resistivity: Ohm Meters @ 25°C. —

Color : Light Straw
Odor : Present
Turbidity: SLight (Sediment)

Theoretical Analysis		
Calcium Carbonate	84.0	4.91
Calcium Bicarbonate	81.1	4.73
Calcium Sulfate	1315.1	76.83
Magnesium Sulfate	264.8	15.47
Sodium Sulfate	5169.6	302.00
Sodium Chloride	11341.2	662.56
Sodium Nitrate	34.0	1.99

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

dp

Don E. Whitlock, Chief Chemist

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TOP G1 0 2 5 4 4 4

PG20025235

TELEPHONE (805) 327-8567 P.O. BOX 867

HORNKOHL LABORATORIES, Inc.
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA 93302

March 24, 1975

Laboratory No. 240203 *Marked* Pond #4

Sample Water

Received March 14, 1975

Submitted by Pacific Gas & Electric
P.O. Box 337
Needles, CA 02363
ATTN: J. R. Lackey

* * * * * *

INDUSTRIAL WATER ANALYSIS

Constituents	Parts per Million	Grains per Gallon
Carbonates, CO_3	98.4	5.75
Bicarbonates, HCO_3	4.9	0.29
Chloride, Cl	6302.0	373.27
Sulfates, SO_4	3444.0	201.41
Sulfides, S	0.0	0.00
Nitrates, NO_3	36.8	2.15
Silica, SiO_2	35.7	2.09
Boron, B	2.7	0.16
Calcium, Ca	520.0	30.41
Magnesium, Mg	29.3	1.71
Sodium, Na	5227.9	305.73
Iron, Fe	under 0.10	0.01
Hardness as $CaCO_3$	1420.0	83.04
Total Dissolved Solids	15572.0	920.57

pH-Value @ 25°C. 9.69
Conductivity: Micromho/cm @ 25°C. —
Resistivity: Ohm Meters @ 25°C. —

Color : Light Straw
Odor : Present
Turbidity: Slight

Theoretical Analysis

Calcium Carbonate	114.0	6.66
Calcium Bicarbonate	6.5	0.38
Calcium Sulfate	1541.1	90.03
Magnesium Sulfate	144.5	8.44
Sodium Sulfate	3317.8	193.83
Sodium Chloride	10522.8	614.74
Sodium Nitrate	50.2	2.93

Respectfully submitted,
HORNKOHL LABORATORIES, INC.
for Lemothe Stone
Robert E. Whitlach, Chief Chemist

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POOR QUALITY ORIGINAL

PG20025248

TELEPHONE (805) 327-4567

P.O. BOX 867

HORNKOHL LABORATORIES, Inc.
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA 93303

April 3, 1975

Laboratory No. 240201-203

Marked As shown below.

Sample Water

P.O. PLOEE9465

Received March 14, 1975

Submitted by PG&E
P.O. Box 337
Needles, CA 92363
ATT.: JR. Lackey

* * * * * *

PARTIAL WATER ANALYSIS

Sample Identification		Electrical Conductivity micromhos/cm	Resistivity ohm meter
Pond #1	--	100,000	0.1
Pond #2	--	20,000	0.5
Pond #4	--	16,000	0.63

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

Robert E. Whitlach

Robert E. Whitlach,
Chief Chemist

ap

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TOP G4

POOR QUALITY ORIGINAL

PG20025249

TELEPHONE (805) 327-4367

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS

214 TRUXTUN AVENUE

BAKERSFIELD, CALIFORNIA 93307

P.O. BOX 847

May 9, 1975

Laboratory No. 240791 *Marked* Water Tank @ Office

Sample Water

Received April 22, 1975

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH
APPROVED WATER LABORATORY

Submitted by Pacific Gas & Electric Co.
P.O. Box 337
Needles, CA 92363
ATTN: J. R. Lackey

* * * * * * *

DOMESTIC WATER ANALYSIS

Constituents:		Parts per Million	Grains per Gallon	Classification
Carbonates, CO_3	--	6.0	0.35	Good
Bicarbonates, HCO_3	--	97.6	5.72	Good
Chlorides, Cl	--	~~325.2~~	19.04	High
Sulfates, SO_4	--	115.2	6.74	Good
Sulfides, S	--	0.0	0.00	Good
Ammonia, NH_3	--	Trace	Trace	Good
Nitrites, NO_2	--	0.0	0.00	Good
Nitrates, NO_3	--	8.0	0.47	Good
Calcium, Ca	--	31.6	1.85	Scale Forming
Magnesium, Mg	--	4.6	0.27	Good
Sodium, Na	--	~~265.6~~	15.53	Fair
Iron, Fe (total)	--	~~[illegible]~~	0.13	Too High
Iron, Fe (dissolved)	--	--	--	--
Fluorides, F	--	0.2	0.01	Good
Manganese, Mn	--	0.0	0.00	Good
Potassium, K	--	13.0	0.66	Good
Hardness as $CaCO_3$	--	98.0	5.73	Good
Total Solids @ 105°C.	--	~~805.4~~	47.10	High

pH-Value @ 25°C.	-	8.4	Fair
Conductivity: Mhos/cm. x 10^5 @ 25°C.	-	1,480	High

Color : Slight Straw
Odor : None
Turbidity : Clear

Theoretical Analysis		
Calcium Carbonate	10.0	0.58
Calcium Bicarbonate	111.8	6.53
Magnesium Bicarbonate	16.1	0.94
Magnesium Sulfate	9.6	0.56
Sodium Sulfate	159.1	9.30
Sodium Chloride	536.7	31.35
Sodium Nitrate	11.1	0.65

REMARKS: Based on the above analysis, the submitted water sample would be classified as satisfactory for domestic and drinking purposes.

Respectfully submitted,
HORNKOHL LABORATORIES, INC.

R. E. Whitlach, Chief Chemist

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POOR QUALITY ORIGINAL

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TELEPHONE (805) 327-8567

OILWELL RESEARCH, INC.
HORNKOHL LABORATORIES DIVISION
CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA 93301

March 31, 1981

Laboratory No
2A-1950
Sample
Water
Received
March 27, 1981
Submitted by
PACIFIC GAS & ELECTRIC COMPANY
P.O. Box 337
Needles, CA 92363
Attention: J. Tayloe

Marked
-1 Pond #1
-2 Pond #2
-3 Pond #3
-4 Pond #4

WATER ANALYSIS
TOTAL DISSOLVED SOLIDS

Pond #1	5,200 mg/l
Pond #2	146,000 mg/l
Pond #3	21,600 mg/l
Pond #4	43,900 mg/l

Respectfully submitted,

Jeanne D. Miller

Jeanne D. Miller, Chief Chemist

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TELEPHONE (805) 327-8567

HORNKOHL LABORATORIES

A Division Of
OILWELL RESEARCH, INC.
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA 93301

Submitted by PACIFIC GAS AND ELECTRIC
P.O. Box 337
Topock Compressor Station
Needles, Ca. 92363

Date Sept. 28,1981

Laboratory No. 2A 2425

Sample Water

Marked #1 Pond #1
#2 Pond #3

Received 9-23-81

WATER ANALYSIS

Test Performed	#1 Milligrams/liter	#2
Total Dissolved Solids	16,360	22,710

Respectfully Submitted,

Richard L. Penner
Chief Chemist

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POOR QUALITY ORIGINAL

PG20012212

The Twining Laboratories, Inc.

Since 1898

Geotechnical and Environmental Consultants • Engineering and Chemical Laboratories

September 18, 1986

Examination #86-06605
Invoice #14285

For: P.G. B.-Topock Compressor Station
P. O. Box 337
Needles, CA 92363

Sample: Water

Received: 9-3-86 from U.P.S.

Identification: #1, 8-29-86, 8a.m., sampled by D. Rype

RESULTS:

ph	9.0
Chromium (Cr), total, mg/L	*0.05
Phosphorus (P), total, mg/L	2.3
Solids, total dissolved, mg/L	25000
Specific Conductance (EC), microhos/cm at 25°C	33800

mg/L: milligram per liter

THE TWINING LABORATORIES, INC.

John Bricarello
Chemistry Division

JB:ja
2c:herewith
1c: Don York/PGE Walnut Creek

2327 Fresno Street • P.O. Box 1472
Fresno, California 93718 • (209) 268-7021

1405 Granite Lane, Suite 1
Modesto, California 95351 • (209) 521-0994

9401 West Goshen Avenue
Visalia, California 93291 • (209) 651-2190

5301 Office Park Drive, Suite 310
Bakersfield, California 93309 • (805) 322-5210

TOP G1

The Twining Laboratories, Inc.

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Geotechnical and Environmental Consultants • Engineering and Chemical Laboratories

September 14, 1987

Examination #687-3760
Invoice #2433

For: Pacific Gas and Electric - Topock
Topock Compressor Station
P.O. Box 337
Needles, CA 92363
ATTN: Richard Davis

Sample: Waters

Received: 8-28-87 via UPS

Identification: Sample 1: #2 Sample 2: #3 Sample 3: #4

TEST RESULTS

	Sa.1	Sa.2	Sa.3	MDL
pH	8.5	7.5	8.4	---
Chromium(Cr),total,mg/L	ND	0.1	ND	0.1
Phosphorus(PO_4-P),total,mg/L	2.8	3.7	2.2	0.1
Specific Conductance(EC), micromhos/cm at 25oC	49,000	24,000	40,000	1
Solids,total dissolved,mg/L	39,000	16,000	30,000	1

MDL:Method detection limit
mg/L:milligram per liter
ND:None detected

THE TWINING LABORATORIES, INC.

John Bricarello
Chemistry Division

JB:ama
2c:herewith
1c:Don York

2527 Fresno Street • PO Box 1472
Fresno, California 93716 • (209) 268-7021

1405 Granite Lane, Suite 1
Modesto, California 95351 • (209) 523-0994

9401 West Goshen Avenue
Visalia, California 93291 • (209) 651-2190

5301 Office Park Drive, Suite 310
Bakersfield, California 93309 • (805) 322-5219

TOP F

HOR. ..OHL LABORATOR..., INC.
714 TRUXTUN AVENUE TELEPHONE FA 7-8567
P. O. Box 867
BAKERSFIELD, CALIFORNIA 93302

June 24, 1964

Pacific Gas & Electric Company
Attn: Mr. C. A. Miller
P. O. Box 488
Barstow, California

Purchase Order No.: LO 706319
INVOICE NO.: 112184

Lab. No. 146,812	Domestic Water Analysis	$17.50
	Chromate Content	7.50
		$25.00

Marked: Sample from New Topockwell, June 1964

mk

ALL BILLS PAYABLE NOT LATER THAN THE 10TH OF THE FOLLOWING MONTH.
1% INTEREST CHARGED AFTER 60 DAYS.

POOR QUALITY ORIGINAL

TEL. FAIRVIEW 7-8566

HORNKOHL LABORATORIES, Inc.

P. O. BOX 867

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

June 24, 1964

LABORATORY NO. -146,812

RECEIVED June 22, 1964

SUBMITTED BY Pacific Gas & Electric
P. O. Box 988
Barstow, California Attn: C. A. Miller

SAMPLE MARKED Sample from New Topockwell, June 64.

DOMESTIC WATER ANALYSIS

CONSTITUENTS	PARTS PER MILLION	GRAINS PER GALLON	CLASSIFICATION
Carbonates (CO_3)	0.0	0.00	Good
Bicarbonates (HCO_3)	228.8	13.38	Good
Chlorides (Cl)	1496.4	87.51	Gab
Sulfates (SO_4)	636.0	37.19	Pear
Sulfides (S)	0.0	0.00	Good
Ammonia (NH_3)	TRACE	TRACE	Good
Nitrites (NO_2)	NEGATIVE	NEGATIVE	Good
Nitrates (NO_3)	48.5	2.84	Bad
Calcium (Ca)	382.4	22/36	Bery Hard
Magnesium (Mg)	69.3	4.05	Fair
Sodium (Na)	822.0	48.01	Too High
Iron (Fe)	0.1	0.01	Good
Hardness as $CaCO_3$	1240.0	72.52	Too High
Total Solids @ 105°C.	3601.6	210.62	Too High
pH	7.7		Good
Conductivity Mhos/cm $x10^5$ @ 25°C.	490.2		Bad
Color	Yellow, due to Chromates		
Odor	None		
Turbidity	Clear		
Chromates	32.5	1.90	Bad

THEORETICAL ANALYSIS

Calcium Bicarbonate	303.9	17.77
Calcium Sulfate	901.9	52.74
Calcium Nitrate	63.9	3.74
Calcium Chromate	43.7	2.56
Calcium Chloride	43.3	2.53
Magnesium Chloride	270.4	15.81
Sodium Chloride	2089.4	112.19

REMARKS: This water, as shown by the classification column above, is unfit for domestic use of any kind; nor would we suggest using it for industrial use.

Respectfully submitted,
HORNKOHL LABORATORIES, INC.,

Technical Director

mk STATE OF CALIFORNIA, DEPARTMENT OF PUBLIC HEALTH, APPROVED WATER LABORATORY

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TEL. FAIRVIEW 7-8566

P. O. BOX 667

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS
714 TRUXTUN AVENUE
BAKERSFIELD, CALIFORNIA

June 24, 1964

WELL NO. 6

LABORATORY NO. -146,812

SAMPLE MARKED

RECEIVED June 22, 1964

SUBMITTED BY Pacific Gas & Electric
P. O. Box 988
Barstow, California Attn: C. A. Miller

Sample from New Topockwell, June 64.

DOMESTIC WATER ANALYSIS

CONSTITUENTS	PARTS PER MILLION	GRAINS PER GALLON	CLASSIFICATION
Carbonates (CO_3)	0.0	0.00	Good
Bicarbonates (HCO_3)	228.8	13.38	Good
Chlorides (Cl)	1496.4	87.51	Gab
Sulfates (SO_4)	636.0	37.19	Poor
Sulfides (S)	0.0	0.00	Good
Ammonia (NH_3)	TRACE	TRACE	Good
Nitrites (NO_2)	NEGATIVE	NEGATIVE	Good
Nitrates (NO_3)	48.5	2.84	Bad
Calcium (Ca)	382.4	22/36	Bery Hard
Magnesium (Mg)	69.3	4.05	Fair
Sodium (Na)	822.0	48.01	Too High
Iron (Fe)	0.1	0.01	Good
Hardness as $CaCO_3$	1240.0	72.52	Too High
Total Solids @ 105°C.	3601.6	210.62	Too High
pH	7.7		Good
Conductivity Mhos/cm x10^5 @ 25°C.	490.2		Bad
Color	Yellow, due to Chromates		
Odor	None		
Turbidity	Clear		
Chromates	32.5	1.90	Bad

THEORETICAL ANALYSIS

Calcium Bicarbonate	303.9	17.77
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Frank Hornkohl
TECHNICAL DIRECTOR

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