Topock Project Executive Abstract

Document Title: First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California Submitting Agency: DTSC Final Document? ☒ Yes ☐ No	Date of Document: April 30, 2015 Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E
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What does this information pertain to? ☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA) ☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment) ☐ Corrective Measures Study (CMS)/Feasibility Study (FS) ☐ Corrective Measures Implementation (CMI)/Remedial Action ☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR) ☒ Interim Measures ☐ Other/Explain:	Is this a Regulatory Requirement? ☒ Yes ☐ No If no, why is the document needed?
What is the consequence of NOT doing this item? What is the consequence of DOING this item? Report is required to be in compliance with DTSC requirements.	Other Justification/s: ☐ Permit ☐ Other / Explain:

Brief Summary of attached document:

This quarterly report documents the monitoring activities and performance evaluation of the Interim Measure (IM) hydraulic containment system under the IM Performance Monitoring Program, the Groundwater Monitoring Program, and the Surface Water Monitoring Program for the Topock project. Hydraulic and chemical monitoring data were collected and used to evaluate IM hydraulic containment system performance based on a set of standards approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). Key items included in this report are: (1) measured groundwater elevations and hydraulic gradient data at compliance well pairs that indicate the direction of groundwater flow is away from the Colorado River and toward the pumping centers onsite, (2) hexavalent chromium data for monitoring wells, (3) pumping rates and volumes from the IM extraction system, and (4) Groundwater Monitoring Program and Surface Water Monitoring Program activities and results.

Based on the data and evaluation presented in this report, the IM performance standard has been met for First Quarter 2015, which includes the months of January, February, and March 2015. The average pumping rate for the IM extraction system during the First Quarter 2015 was 132.0 gallons per minute. To date, the IM extraction system has removed a total of 8,210 pounds (3,720 kilograms) of chromium.

Written by: PG&E

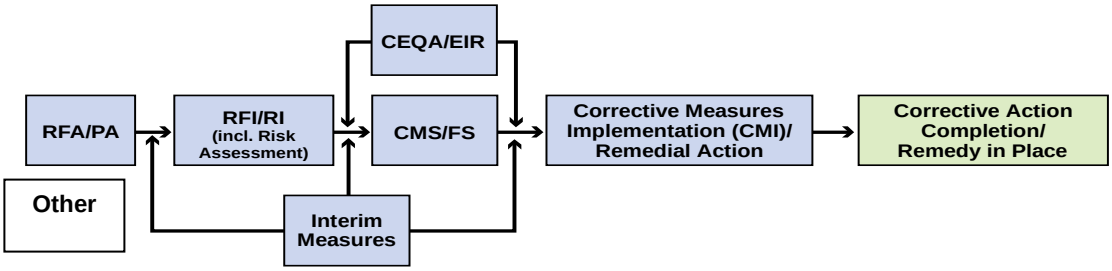
Recommendations:
This report is for information only.

How is this information related to the Final Remedy or Regulatory Requirements:
This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.

Other requirements of this information?
None.

Related Reports and Documents:

Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com).



Legend

RFA/PA – RCRA Facility Assessment/Preliminary Assessment
RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)
CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study
CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

Version 9

Pacific Gas and Electric Company®

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April 30, 2015

Mr. Aaron Yue
Project Manager
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Subject: *First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* (Document ID: PGE20150430A)

Dear Mr. Yue:

Enclosed is the *First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California,* for Pacific Gas and Electric Company's (PG&E's) Interim Measures (IM) Performance Monitoring Program and the Groundwater Monitoring Program (GMP) and Surface Water Monitoring Program (RMP) for the Topock project. This report presents the First Quarter 2015 (January through March 2015) performance monitoring results for the IM hydraulic containment system and summarizes the operations and performance evaluation for the reporting period. In compliance with the requirements for the GMP and RMP directive of April 2005 (DTSC, 2005a), this report also presents groundwater and surface water monitoring activities, results, and analyses related to the GMP and RMP during First Quarter 2015.

The IM quarterly performance monitoring report is submitted in conformance with the reporting requirements in the California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC) IM directive, dated February 14, 2005, and updates and modifications approved by DTSC in letters or emails dated October 12, 2007; July 14, 2008; July 17, 2008; March 3, 2010; April 28, 2010; July 23, 2010; and June 27, 2014.

Please contact me at (805) 234-2257 if you have any questions on this combined monitoring report.

Sincerely,

Yvonne Meeks
Topock Project Manager

Enclosure
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

cc: Chris Guerre/DTSC
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Bruce Campbell/AZ-SLD

Final Report

First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Document ID: PGE20150430A

Prepared for

California Environmental Protection Agency, Department of Toxic Substances Control

On behalf of

Pacific Gas and Electric Company

April 30, 2015

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First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Prepared for

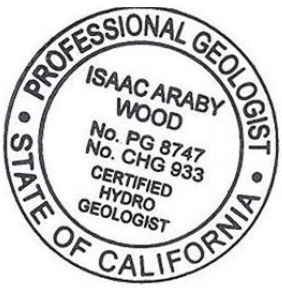
California Environmental Protection Agency, Department of Toxic Substances Control

On behalf of

Pacific Gas and Electric Company

April 30, 3015

This report was prepared under the supervision of a California Professional Geologist



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Acronyms and Abbreviations

µg/L	micrograms per liter
COPC	chemical of potential concern
Cr(VI)	hexavalent chromium
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
ft/ft	feet per foot
GMP	Groundwater Monitoring Program
gpm	gallons per minute
ID	identification
IM	Interim Measure
IM-3	Interim Measure Number 3
IMCP	Interim Measures Contingency Plan
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
RCRA	Resource Conservation and Recovery Act
RMP	Surface Water Monitoring Program
RPD	relative percent difference
RRB	Red Rock Bridge
TDS	total dissolved solids
USBR	United States Bureau of Reclamation
USEPA	United States Environmental Protection Agency

SECTION 1

1 Introduction

Pacific Gas and Electric Company (PG&E) is implementing Interim Measures (IMs) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The Topock Compressor Station is located in eastern San Bernardino County, 15 miles southeast of the city of Needles, California, as shown on Figure 1-1. (Figures are located at the end of the report.) This report presents monitoring data from three PG&E monitoring programs:

- Site-wide Groundwater Monitoring Program (GMP)
- Site-wide Surface Water Monitoring Program (RMP)
- Interim Measure Number 3 (IM-3) Performance Monitoring Program (PMP) (data and evaluations)

This report presents the monitoring data from PG&E's GMP, RMP, and PMP, collected from January 1, 2015 through March 31, 2015 (hereafter referred to as the reporting period, or First Quarter 2015). The data collected as part of the GMP and RMP are presented in Section 3. The data collected as part of the PMP are presented in Section 4. This combined PMP and GMP (including RMP) reporting format was approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) in May 2009 (DTSC, 2009). On July 23, 2010, DTSC approved a new sampling event timing and reporting schedule for the PMP, GMP, and RMP programs (DTSC, 2010a). On June 27, 2014, DTSC approved changes to the reporting schedule that added 2 weeks to the preparation of the third quarter report (DTSC, 2014) and included changes to the sample frequencies. Table 1-1 shows the reporting schedule. (Tables are located at the end of the report.)

Starting in Third Quarter 2014, the groundwater sample collection method for most monitoring wells was switched from the traditional three-volume method to the minimal drawdown method, as approved by DTSC (June 2014). Chromium results tables following in this report indicate the method used for groundwater sample collection. Minimal drawdown sample collection is conducted following the standard operating procedures detailed in the *Sampling and Analysis Field Procedures Topock Program Manual, Revision 1, Pacific Gas and Electric Company, Topock Project* (CH2M HILL, 2005a) and relevant updates.

1.1 Site-wide Groundwater and Surface Water Monitoring Program

The Topock GMP and RMP were initiated as part of a Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act facility investigation/remedial investigation groundwater investigation. These programs are being regulated under a Corrective Action Consent Agreement issued by the DTSC in 1996 for the Topock site (United States Environmental Protection Agency [USEPA] ID No. CAT080011729).

Groundwater monitoring data collected between July 1997 and October 2007 are presented in the *Revised Final RCRA Facility Investigation and Remedial Investigation Report, Volume 2 – Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*, dated February 11, 2009 (CH2M HILL, 2009a). Select groundwater and surface water monitoring data from November 2007 through September 2008 are presented in the *Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 Addendum – Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California,* dated June 29, 2009 (CH2M HILL, 2009b).

Background information (including well construction details) and descriptions of the current groundwater and surface water sampling, analyses, and monitoring programs are discussed in PG&E's *Fourth Quarter*

2013 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California, dated March 15, 2014 (CH2M HILL, 2014a).

In compliance with the requirements for the GMP and RMP directive of April 2005 (DTSC, 2005a), this document presents the First Quarter 2015 GMP and RMP report for the monitoring activities from January 1, 2015 through March 31, 2015.

1.1.1 Groundwater Monitoring Program and Surface Water Monitoring Program Monitoring Networks

Figure 1-2 shows the current locations and sampling frequencies of the monitoring wells in the GMP. The complete GMP includes over 140 wells that monitor groundwater in the Alluvial Aquifer and the bedrock and consist of the following:

- One hundred twenty-nine monitoring wells in California, including two normally dry wells
- Eight monitoring wells in Arizona
- Two water supply wells
- Two active extraction wells
- Five test wells

Sampling frequencies for the GMP wells were revised beginning in First Quarter 2015, following the DTSC direction given June 27, 2014 (DTSC, 2014). Figure 1-2 shows the new sampling frequencies, with the sampling purge method indicated by the font of the well identification labels. These changes include sampling all three Arizona monitoring well locations at semi-annual frequency following DTSC's direction; previously one location was sampled annually since 2010. Sampling frequencies for the Arizona monitoring wells were previously updated following the April 23, 2010 approval from the Arizona Department of Environmental Quality (Arizona Department of Environmental Quality, 2010) and the April 28, 2010 directive from DTSC (DTSC, 2010c). DTSC requested an updated sampling plan for non-chromium water quality analyses with the June 27, 2014 response that also approved the sampling program modifications proposed by PG&E (CH2M HILL, 2014a). Modifications to GMP analytical plans including new Title 22 metals and annual water quality sampling plans were presented in the Fourth Quarter and Annual Report in response to that DTSC request and are undergoing Agency review (CH2M HILL, 2015).

Figure 1-3 shows the locations and sampling frequencies of the RMP, which consists of:

- Ten river channel surface water monitoring locations.
- Four shoreline surface water monitoring locations.
- Two other surface water monitoring locations.

1.2 Interim Measure Performance Monitoring Program

In compliance with the requirements for IM monitoring and reporting outlined in the DTSC IM performance directive of February 2005 and in subsequent directives from the DTSC in 2007 (DTSC, 2005b, 2007a-c), this document presents the First Quarter 2015 PMP evaluation report for the IM monitoring activities from January 1, 2015 through March 31, 2015.

The Topock IM project consists of groundwater extraction for hydraulic control of the plume boundaries in the Colorado River floodplain and management of extracted groundwater. The groundwater extraction, treatment, and injection systems are collectively referred to as IM-3. The IM monitors only the Alluvial Aquifer. Currently, the IM-3 facilities include a groundwater extraction system (four extraction wells: TW-2D, TW-3D, TW-2S, and PE-1), conveyance piping, a groundwater treatment plant, and an injection well field for the discharge of the treated groundwater. Extraction wells PE-1 and TW-3D currently operate full time. Figure 1-1 shows the locations of the IM-3 extraction, conveyance, treatment, and injection facilities.

In a letter dated February 14, 2005, DTSC established the criteria for evaluating the performance of the IM (DTSC, 2005c). As defined by DTSC, the performance standard for this IM is to "establish and maintain a net landward hydraulic gradient, both horizontally and vertically, that ensures that hexavalent chromium [Cr(VI)] concentrations at or greater than 20 micrograms per liter [µg/L] in the floodplain are contained for removal and treatment" (DTSC, 2005b). A *Draft Performance Monitoring Plan for Interim Measures in the Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California* (CH2M HILL, 2005b) was submitted to DTSC on April 15, 2005 (herein referred to as the Performance Monitoring Plan or PMP).

The February 2005 DTSC directive also defined the monitoring and reporting requirements for the IM (DTSC, 2005b-c). In October 2007, DTSC modified the reporting requirements for the PMP (DTSC, 2007a) to discontinue monthly performance monitoring reports (the quarterly and annual reporting requirements were unchanged). Additional updates and modifications to the PMP were approved by DTSC in letters dated October 12, 2007; July 14, 2008; July 17, 2008; July 23, 2010, and June 27, 2014 (DTSC, 2007a, 2008a-b, 2010a, 2014).

1.2.1 Performance Monitoring Program Monitoring Networks

Figure 1-4 shows the locations of wells used for IM extraction, performance monitoring, and hydraulic gradient measurements. With approval from DTSC, the list of wells included in the PMP was modified beginning August 1, 2008. The performance monitoring wells in service/active during this reporting period are defined as:

- Floodplain wells: monitoring wells on the Colorado River floodplain.
- Intermediate wells: monitoring wells immediately north, west, and southwest of the floodplain.
- Interior wells: monitoring wells upgradient of IM pumping.
- Extraction wells: TW-2D, TW-3D, TW-2S, and PE-1.

Three extraction wells (TW-2D, TW-3D, and TW-2S) are located on the MW-20 bench. Extraction well PE-1 is on the floodplain approximately 450 feet east of extraction well TW-3D, as shown on Figure 1-4. Extraction wells TW-3D and PE-1 operate full time.

Groundwater monitoring wells installed on the Arizona side of the Colorado River are not formally part of the PMP, but some of these wells have been used to collect groundwater elevation data for evaluating the hydraulic gradient on the Arizona side of the river.

The PMP monitors hydrogeologic conditions in the Alluvial Aquifer. The wells screened in the unconsolidated alluvial fan and fluvial deposits, which comprise the Alluvial Aquifer, have been separated into three depth intervals to present groundwater quality and groundwater level data. The depth intervals of the Alluvial Aquifer in the floodplain area—designated upper (shallow wells), middle (mid-depth wells), and lower (deep wells)—are based on grouping the monitoring wells screened at common elevations. These divisions do not correspond to any lithostratigraphic layers within the aquifer. The Alluvial Aquifer is considered to be hydraulically undivided. The subdivision of the aquifer into three depth intervals is an appropriate construct for presenting and evaluating spatial and temporal distribution of groundwater quality data in the floodplain. The three-interval concept is also useful for presenting and evaluating lateral gradients while minimizing effects of vertical gradients and observing the influence of pumping from partially penetrating wells.

1.3 Sustainability

The GMP, PMP, and RMP monitoring programs strive to use sustainable sampling and data collection practices. This section briefly describes some of the sustainability practices now in use.

As approved by the California Regional Water Quality Control Board in 2006, groundwater sampling purge water is disposed via the onsite IM-3 treatment plant and injection process, eliminating offsite transport and disposal of sampling purge water. In 2011, onsite IM-3 staff were trained to take on the role of groundwater

sampling support in place of an offsite support contractor. The monitoring teams also designed a groundwater sampling truck that was locally fabricated. The use of local staff and a local sampling truck eliminated mobilizations from the Los Angeles area by the former offsite contractor. Additionally, the RMP boat contractor has always been a local Lake Havasu City-based business. Benefits of using local resources for sampling support are reduced fuel consumption and greenhouse gas emissions, and increased local business support.

To reduce the potential for impacts to floodplain areas with nesting habitat, water level data telemetry systems were installed from 2011-2012 at the five key gradient compliance well locations. The solar-powered data telemetry systems eliminated the need for weekly download visits and allows for monthly or less-frequent visits for key well transducer calibrations and maintenance.

The DTSC approved the provisional use of minimal drawdown sampling on June 27, 2014 (DTSC, 2014) at most alluvial screened wells. Minimal drawdown sampling reduced the volume of purge water and sampling footprint at most wells. For wells still using the three-casing-volume purge sampling methods (primarily bedrock and long screened wells), pumps and tubing are sized for the optimum purge technique at each monitoring well. Utility vehicles (for example, Polaris Ranger or Kawasaki Mule) and one quiet electric four-wheel drive utility vehicle are used to access wells on the floodplain and some culturally sensitive well locations rather than the full-size pickup truck. These best practices reduce generator use, impacts from well access, and decontamination water volume to further decrease the monitoring footprint.

SECTION 2

2 First Quarter 2015 Monitoring Activities

This section summarizes the monitoring and sampling activities completed during the reporting period.

2.1 Groundwater Monitoring Program

2.1.1 Monthly

Groundwater was sampled from the active IM extraction wells (PE-1 and TW-3D) in January, February, and March 2015 and was analyzed for Cr(VI), chromium, total dissolved solids (TDS), and pH.

2.1.2 Quarterly

The First Quarter 2015 GMP quarterly groundwater monitoring event was conducted from February 9, 2015 through March 24, 2015. Select field parameters recorded during well purging included oxidation-reduction potential and pH. Groundwater samples were analyzed for Cr(VI), chromium, and specific conductance.

During the First Quarter 2015 sampling event, groundwater samples were collected at select GMP wells and were submitted for laboratory analysis of Cr(VI) and other constituents, including:

- Chemicals of potential concern (COPCs), including molybdenum, nitrate as nitrogen (referred to as nitrate hereafter), selenium, potential in situ byproducts (manganese and arsenic), and other analytes. In an email dated March 3, 2010, DTSC directed monitoring of these COPCs, potential in situ byproducts, and other analytes at select wells (DTSC, 2010d, 2011). That frequency was modified with the June 27, 2014 email from DTSC.
- Arsenic from a subset of wells screened in fluvial sediments, as directed by DTSC in the Corrective Measures Study review comment No. 186 (DTSC, 2009b).
- Arsenic from bedrock monitoring wells.

2.1.3 Well Maintenance

PG&E performs quarterly inspections and takes corrective actions as necessary to ensure that the monitoring wells are in good working condition (DTSC, 2013; CH2M HILL, 2005a-b). Table A-1 in Appendix A summarizes the quarterly inspection log, field observations, and mitigation actions, if any, for well maintenance.

2.1.4 Well Sampling Method Trial at Well Clusters MW-38 and MW-40

In conformance with the June 27, 2014 direction email from DTSC, PG&E began conducting a sampling method trial at MW-38S, MW-38D, MW-40S, and MW-40D during Fourth Quarter 2014. At MW-38S and MW-38D, both micropurge and three-volume purge samples are being collected for comparison at regular sampling intervals. At MW-40S and MW-40D, both HydraSleeve and three-volume purge samples are being collected for comparison at regular sampling intervals. Sample results from this comparison study will be evaluated in the 2015 annual GMP report.

2.2 Surface Water Monitoring Program

Low-river-stage surface water sampling was conducted January 14 and 15, 2015, and quarterly surface water sampling was conducted February 24 and 25, 2014 from the complete RMP monitoring network. Samples were analyzed for Cr(VI), chromium, specific conductance, and pH. Samples were also analyzed for COPCs (molybdenum, nitrate, and selenium), in situ byproducts (manganese, iron, and arsenic), and geochemical indicator parameters (barium and total suspended solids) to develop baseline concentrations for future remedy performance evaluation.

2.3 Performance Monitoring Program

Groundwater samples for the PMP were collected during the GMP quarterly sampling event. In addition, PMP pressure transducers, which are used to monitor hydraulic gradients of the Alluvial Aquifer, were downloaded in the first week of every month (January, February, and March). The transducers in the key monitoring wells (MW-27-085, MW-31-125, MW-33-150, MW-34-100, and MW-45-095a, shown on Figure 1-4) are downloaded via a cellular telemetry system.

SECTION 3

3 Results for Site-wide Groundwater Monitoring and Surface Water Sampling

3.1 Groundwater Results for Hexavalent Chromium and Chromium

Table 3-1 presents the results for Cr(VI), chromium, field oxidation-reduction potential, laboratory-specific conductance, and field pH in groundwater samples collected during the First Quarter 2015.The maximum detected Cr(VI) concentration was 31,000 µg/L at well MW-68-180. The laboratory reports from First Quarter 2015 sampling are presented in Appendix B.

Figures 3-1a and 3-1b present the Cr(VI) results for wells monitoring the shallow (upper-depth interval) and deep (lower-depth interval) wells, respectively, of the Alluvial Aquifer and bedrock from First Quarter 2015. The mid-depth map (normally Figure 3-1b) was not included in this report because there were no samples collected from the mid-depth floodplain sampling interval this quarter. Figures 3-1a and 3-1b each show the approximate outline of Cr(VI) concentration contours greater than 32 µg/L for the Alluvial Aquifer and bedrock. These contour outlines are based on results from groundwater sampling events conducted in First Quarter 2015 and the Fourth Quarter of 2014 when data monitoring data for additional monitoring wells were sampled. The value of 32 µg/L is based on the calculated natural background upper tolerance limit for Cr(VI) in groundwater from the background study (CH2M HILL, 2008, 2009a).

The areas where Cr(VI) concentrations are greater than 32 µg/L in the shallow, mid-depth, and deep intervals of the Alluvial Aquifer and bedrock wells are generally similar to the previous quarterly monitoring events (CH2M HILL, 2011a-d, 2012a-d, 2013a-d, 2014a-d, and 2015). Topock Compressor Station wells MW-65-160 and MW-68-180 continued their generally upward concentration trends but with only modest increases from their previous maxima.

3.2 Other Groundwater Monitoring Results

3.2.1 Chemicals of Potential Concern, In Situ Byproducts, and Other Analytes

Table 3-2 presents the COPCs and in situ byproducts for groundwater monitoring wells sampled in First Quarter 2015. The wells where maximum concentrations of these analytes were reported are summarized as follows:

- MW-46-175 with a molybdenum concentration of 200 µg/L
- MW-68-180 with a nitrate concentration of 30.0 milligrams per liter
- MW-68-180 with a selenium concentration of 15.0 µg/L
- MW-64BR with a manganese concentration of 770 µg/L
- MW-38S and MW-72BR-200, each with an arsenic concentration of 14.0 µg/L

Molybdenum, selenium, and arsenic did not show a significant trend in the wells sampled. Nitrate continued its upward trend in well MW-65-160. Manganese continued its upward trend in well MW-38S, reflecting that well's more reducing condition (strongly negative oxidation-reduction potential, low dissolved oxygen).

3.2.2 Arsenic Sampling in Monitoring Wells

Select Alluvial Aquifer and bedrock wells were sampled for arsenic in the First Quarter 2015 event. Selected arsenic results are presented with the COPCs and in situ byproducts results in Table 3-2. Additional arsenic results are presented in Appendix C, Table C-1. Arsenic concentrations were within expected ranges for the wells sampled.

3.3 Surface Water Sampling Results

Table 3-3 presents results of Cr(VI), chromium, specific conductance, and lab pH from the surface water sampling event conducted during this reporting period. Neither Cr(VI) nor chromium was detected above reporting limits at any in-channel, shoreline, or other surface water monitoring locations.

Table 3-4 presents results for the COPCs (molybdenum, nitrate, and selenium), in situ byproducts (manganese, iron, and arsenic), and other geochemical indicator parameters for surface water samples. Arsenic (less than 3 µg/L), barium (equal to or less than 140 µg/L), molybdenum (less than 5.5 µg/L), nitrate/nitrite as nitrogen (less than 1.0 milligram per liter), and selenium (less than 2 µg/L) concentrations were detected at all sampled locations. The dissolved manganese results were below laboratory reporting limits, with the exception of the samples collected at C-MAR, where moderate values were reported. The C-MAR sample location is near the east side of the Colorado River at the mouth of the Topock Marsh area as shown on Figure 1-3. This location is out of the main river channel and adjacent to an area of naturally reducing geochemical conditions in groundwater. Elevated manganese concentrations are typical of reduced geochemical environments. Dissolved iron results were generally low and near or below laboratory reporting limits.

3.4 Data Validation and Completeness

Laboratory analytical data from the First Quarter 2015 sampling events were reviewed by project chemists to assess data quality and to identify deviations from analytical requirements.

The following bullets summarize the notable analytical qualifications in data reported this quarter:

- Five Cr(VI) (USEPA Method 218.6) results exhibited a matrix interference issue that required a dilution to achieve satisfactory matrix spike recovery, resulting in an elevated reporting limit. No flags were applied.
- Three samples were associated with matrix spike recoveries that were outside the control limits and were qualified: MW-69-195 for dissolved manganese (USEPA Methods SW6020A); R63 for total iron (USEPA Methods SW6010B); and TW-03D for dissolved manganese (USEPA Methods 200.8). The associated sample results were qualified as estimated and flagged “J.”
- One sample was associated with a lab duplicate that had a relative percent difference (RPD) greater than the upper control limit for total suspended solids (Method SM2540D). The result was qualified as estimated and flagged “J.”
- Based on the March 2007 USEPA ruling and reaffirmed in the May 2012 USEPA ruling, pH has a 15-minute holding time. As a result, all samples analyzed in a certified lab by Method SM4500-HB (pH) are analyzed outside the USEPA-recommended holding time. Therefore, the 54 pH results for the low-river and first quarter sampling events analyzed in a certified lab were qualified as estimated and flagged “J.”.

For the First Quarter 2015 sampling events, three wells (MW-65-160, PE-01, and TW-03D) required resampling. The initial sample for MW-65-160 was collected February 17. The sampling crew noted the turbidity continued to fluctuate throughout the sample collection. Because the initial sample had an RPD between the Cr(VI) bottle and dissolved chromium bottle of greater than 50 percent, a new dedicated bladder pump was installed, and a new sample was collected. The results from the resample had an RPD of approximately 15 percent between Cr(VI) and dissolved chromium results. The resample results are reported in this report.

A sample is collected monthly from PE-01 and TW-03D by the staff working at the IM-3 facility. On March 17, ASSET laboratory notified CH2M HILL’s chemist that the samples collected March 3 seemed to have been mislabeled. The concentration of the various parameters were consistent with historic data; however, the results for PE-01 were consistent with historic TW-03D results, and the TW-03D results were consistent with

historic PE-01 results. The March 3 samples were cancelled, and a new set of samples were collected on March 17, which had results consistent with their labels and with historical results.

No other significant analytical deficiencies were identified in the First Quarter 2015 data. Additional details are provided in the data validation reports, which are kept in the project file and are available upon request.

SECTION 4

4 Interim Measure Performance Monitoring Program Evaluation

4.1 Water Quality Results for Performance Monitoring Program Floodplain Wells

In July 2008 and June 2014, DTSC approved modifications to the PMP IM chemical performance monitoring parameters (DTSC, 2008b, 2014). These wells are sampled annually (one well sampled biennially) during the Fourth Quarter sampling events. For the complete annual general chemistry results, see Table F-1 in Appendix F in the *Fourth Quarter 2014 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*, dated March 15, 2015 (CH2M HILL, 2015). Figure 1-4 shows the locations of the monitoring wells sampled for the performance monitoring parameters. Water samples from the selected performance monitoring locations are analyzed for general chemistry parameters, including TDS, chloride, sulfate, nitrate, bromide, calcium, potassium, magnesium, sodium, boron, alkalinity, deuterium, and oxygen-18 to monitor the effects of IM pumping on groundwater chemistry.

4.2 Hexavalent Chromium Distribution and Trends in Performance Monitoring Program Wells

The First Quarter 2015 distribution of Cr(VI) in the upper (shallow wells) and lower (deep wells) intervals of the Alluvial Aquifer is shown in plan view and cross-section on Figure 4-1.[1] Figure 4-2 presents the First Quarter 2015 Cr(VI) results for cross-section B, oriented parallel to the Colorado River. The location of cross-section B is shown on Figure 1-4. The most recent Cr(VI) concentration contours shown for the Alluvial Aquifer on these figures are based on a combination of results for groundwater samples collected in Fourth Quarter 2014, when a larger number of wells were sampled, and First Quarter 2015 for the shallow (upper-depth) and deep (lower-depth) intervals, and the Fourth Quarter of 2014 for the mid-depth interval (no mid-depth samples from the floodplain were collected during the First Quarter of 2015).

Figure 4-3 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through March 2015. Sampling results are plotted for wells MW-34-100, MW-36-90, MW-36-100, MW-44-115, MW-44-125, and MW-46-175; only MW-44-115, MW-46-165, and MW-34-100 were sampled this quarter. The locations of the deep wells selected for performance evaluation are shown on Figure 1-4. Appendix D includes Cr(VI) concentration trend graphs for selected monitoring wells through March 2015. On trend graphs in Appendix D, if a sample was collected by micropurge method instead of from the traditional three-volume method, the sample purging method change is indicated by a different symbol on the same graph with the data from the recently adopted purge method labeled “MP” for micropurge or minimal drawdown. Micropurge results generally agree with historical trends (and seasonal trends where present) at these locations. Micropurge results will be reviewed in greater detail as a larger dataset of micropurge results is developed for comparison to the previous three-volume purging method.

Wells showing marked decreases in concentration over time are generally in the floodplain area where IM pumping is removing chromium contaminated groundwater. Wells with historical detections near or at

[1] On Figures 4-1 and 4-2, the Cr(VI) concentrations are color-coded based on the groundwater background Cr(VI) concentration, which is 32 µg/L (CH2M HILL, 2009a). The 20-µg/L and 50-µg/L Cr(VI) concentration contours presented on Figures 4-1 and 4-2 are shown in accordance with DTSC’s 2005 IM directive and are not based on the background Cr(VI) concentration for groundwater.

reporting limits (for chromium, a typical reporting limit is 0.2 to 1.0 µg/L) remained at these low levels during First Quarter 2015. A review of Figure 4-3 and Appendix D indicates that Cr(VI) concentrations have remained steady or have decreased in many wells since IM and PE-1 pumping began in 2004 and 2005, respectively.

Key Cr(VI) and chromium trends for PMP groundwater monitoring wells (data in Appendix D; see Figure 1-4 for locations) sampled during First Quarter 2015 include:

- As shown on Figure 4-3 and on Figure D-6 in Appendix D, Cr(VI) results for MW-34-100 have been variable but generally declining from June 2006 through 2010 and then stable since January 2011. In addition to these trends in Cr(VI) concentration, MW-34-100 also shows a consistent but secondary seasonal effect in concentration related to high (spring/summer) and low (winter) Colorado River levels.
- Cr(VI) results for MW-44-115 have shown a steady declining trend since the well was constructed in 2006, as shown on Figure 4-3 and on Figure D-10 in Appendix D.
- Superimposed on a decreasing longer-term trend for Cr(VI), the secondary trend of seasonal fluctuation in Cr(VI) is also seen in monitoring well MW-46-175 (see Figure 4-3 and Figure D-11 in Appendix D). River levels are discussed in Section 4.6.

4.3 Performance Monitoring Program Contingency Plan Hexavalent Chromium Monitoring

The Topock Interim Measures Contingency Plan (IMCP) was developed to detect and control any possible migration of the Cr(VI) plume toward the Colorado River. Currently, the IMCP consists of 24 wells (CH2M HILL, 2005b, 2006; PG&E, 2007, 2008). Appendix D includes Cr(VI) concentration trend graphs for the IMCP wells. The IMCP well Cr(VI) results in First Quarter 2015 were below the trigger levels requiring contingency actions.

4.4 Extraction Systems Operations

Pumping data for the IM-3 groundwater extraction system for the reporting period of January 1 through March 31, 2015 are presented in Table 4-1. From January 1, 2015 through March 31, 2015, the volume of groundwater extracted and treated by the IM-3 system was 17,097,717 gallons. This resulted in the removal of an estimated 53.6 pounds (24.3 kilograms) of chromium from the aquifer during the period from January 1, 2015 through February 28, 2015.[2] Through February 2015, the IMs have removed approximately 8,210 pounds of chromium from the floodplain at the Topock site.

During First Quarter 2015, extraction wells TW-3D and PE-1 operated at a combined pumping rate of 132.0 gallons per minute (gpm), including periods of planned and unplanned downtime. The average monthly pumping rates during the reporting period were 130.8 (January), 134.7 (February), and 130.5 (March). Extraction well TW-2S was not operated during First Quarter 2015. Extraction well TW-2D ran for a short period of time on March 10, 2015. The operational runtime percentage for the IM extraction system was 97.6 percent during this reporting period. The operations log for the extraction system during First Quarter 2015, including planned and unplanned downtime, is included in Appendix E.

The concentrate (saline water) from the reverse osmosis system was shipped offsite as nonhazardous waste and was transported to Liquid Environmental Solutions in Phoenix, Arizona, for treatment and disposal. Eight containers of solids from the IM-3 facility were disposed of at the U.S. Ecology Chemical Waste

[2] Chromium removed this reporting period includes the period of January 1 through February 28, 2015. On July 23, 2010, DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from January 1, 2015 through February 28, 2015.

Management facility in Beatty, Nevada, during First Quarter 2015. Daily IM-3 inspections included general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained onsite.

During the reporting period, Cr(VI) concentrations in TW-3D remained stable, ranging from a maximum value of 790 µg/L in January to a minimum value of 690 µg/L in March, as shown in Table 4-2. TDS concentrations in TW-3D for this reporting period have also remained stable, as shown in Table 4-2.

The Cr(VI) concentrations in the extracted groundwater at well PE-1 on the floodplain ranged from 3.4 to 4.2 µg/L during the reporting period, as shown in Table 4-2. TDS concentrations in PE-1 for this reporting period have also remained stable.

4.5 Hydraulic Gradient and River Levels during Quarterly Period

During the reporting period, water levels were recorded at intervals of 30 minutes with pressure transducers in more than 50 wells in the Alluvial Aquifer and two river monitoring stations (I-3 and RRB). The data are typically continuous, with only short interruptions for sampling or maintenance. The locations of the wells monitored are shown on Figure 1-4.

Daily average groundwater and river elevations calculated from the pressure transducer data for the reporting period are summarized in Table F-1 in Appendix F. Groundwater elevations (or hydraulic heads) are adjusted for temperature and salinity differences between wells (that is, adjusted to a common freshwater equivalent), as described in the Performance Monitoring Plan. Groundwater elevation hydrographs for the PMP wells during the reporting period are included in Appendix F. The elevation of the Colorado River measured at the I-3 gauge station (shown on Figure 1-4) is also shown on the hydrographs in Appendix F.

Average First Quarter 2015 groundwater elevations for the shallow, mid-depth, and deep wells are presented and contoured in plan view on Figures 4-4a through 4-4c. Average First Quarter 2015 groundwater elevations for wells on floodplain cross-section A are presented and contoured on Figure 4-5. Several monitoring wells are significantly deeper than other wells in the lower depth interval. Due to vertical gradients present at the Topock site, water levels in deeper wells tend to be higher than water levels in shallower wells.

Hydraulic gradients were measured during the reporting period for well pairs selected for performance monitoring of the two pumping centers (TW-3D and PE-1). The following well pairs were approved by DTSC on October 12, 2007 (DTSC, 2007a) to define the gradients induced while pumping from two locations:

- MW-31-135 and MW-33-150 (northern gradient pair)
- MW-45-95 and MW-34-100 (central gradient pair)
- MW-45-95 and MW-27-85 (southern gradient pair)

Table 4-3 presents the average monthly hydraulic gradients measured between the gradient well pairs in First Quarter 2015. Figure 4-6 presents graphs of the hydraulic gradients, monthly average pumping rates, and river levels for the quarterly period. Strong landward gradients were measured each month. The overall average gradients for all well pairs ranged from 0.0053 to 0.0059 feet per foot (ft/ft), which is 5.3 to 5.9 times greater than the required gradient of 0.001 ft/ft. The gradient for the northern well pair ranged from 2.3 to 2.7 times the target gradient of 0.001 ft/ft. For the central well pair, the average landward gradient ranged from 9.8 to 10.7 times the target gradient. The southern well pair gradients averaged 3.9 to 4.3 times the target gradient for the reporting period.

4.6 Projected River Levels during Next Quarter

The Colorado River stage near the Topock Compressor Station is measured at the I-3 location and is directly influenced by releases from Davis Dam and, to a lesser degree, from Lake Havasu elevations, both of which are controlled by the United States Bureau of Reclamation (USBR). Total releases from Davis Dam follow a predictable annual cycle, with largest monthly releases typically in spring and early summer and smallest monthly releases in late fall/winter (November and December). In addition to this annual cycle is a diurnal cycle determined primarily by daily fluctuations in electric power demand. Releases within a given 24-hour period often fluctuate over a wider range of flows than that of monthly average flows over an entire year.

Figure 4-7 shows river stage measured at I-3 superimposed on the projected I-3 river levels. Projected river levels for future months are based on the USBR projections of Davis Dam discharge and Lake Havasu levels from the preceding month. As an example, the projected river level for April 2015 is based on the March 2015 USBR data of Davis Dam release and Lake Havasu level, not the actual release and level values. The variability between measured and projected river levels is due to the difference between measured and actual Davis Dam release and Lake Havasu levels. The more recent data plotted on Figure 4-7 are summarized in Table 4-4. The future projections shown on Figure 4-7 are based on USBR long-range projections of Davis Dam releases and Lake Havasu levels from March 2015. There is more uncertainty in these projections at longer times in the future because water demand is based on various elements including climatic factors.

Current USBR projections, presented in Table 4-4, show that the average projected Davis Dam release for April 2015 (18,000 cubic feet per second) will be more than the actual release in March 2015 (15,658 cubic feet per second). Based on April 2015 USBR predictions, it is anticipated that the Colorado River level at the I-3 gauge location in April 2015 will be approximately 0.81 foot higher compared to the actual levels in March 2015. Current projections show that the water levels will continue to increase through April then decrease through the rest of the next quarterly reporting period (May and June), as shown on Figure 4-7.

4.7 Quarterly Performance Monitoring Program Evaluation Summary

The groundwater elevation and hydraulic gradient data from January 2015 through March 2015 performance monitoring indicate that the minimum landward gradient target of 0.001 ft/ft was exceeded each month during the quarterly reporting period. The overall average landward gradients during First Quarter 2015 were 5.3 to 5.9 times the required minimum magnitude. The current gradient well pairs are adequate to define the capture of the Cr(VI) plume while pumping from extraction wells TW-3D and PE-1. Based on the hydraulic and monitoring data and evaluation presented in this report, the IM performance standard has been met for the First Quarter 2015 reporting period.

A total of 17,097,717 gallons of groundwater was extracted from January through March 2015 by the IM-3 treatment facility. The average pumping rate for the IM extraction system during First Quarter 2015, including system downtime, was 132.0 gpm. An estimated 53.6 pounds (24.3 kilograms) of chromium were removed and treated between January 1 and February 28, 2015. To date, the IMs have removed approximately 8,210 pounds of chromium from the floodplain at the Topock site through February 2015.

The wells that are monitored to detect trends in Cr(VI) in the IM pumping area (for example, MW-34-100, MW-44-115, and MW-46-175) continue to show overall stable or declining Cr(VI) concentrations relative to prior monitoring results, as shown in Appendix D.

SECTION 5

5 Upcoming Operation and Monitoring Events

Reporting of the IM extraction and monitoring activities will continue as described in the PMP and under direction from DTSC. Monitoring results, operations, and performance monitoring data will be reported in the Second Quarter 2015 monitoring report, which will be submitted by August 14, 2015.

5.1 Groundwater Monitoring Program

5.1.1 Quarterly Monitoring

The Second Quarter monitoring event is planned for April 20, 2015 through May 2015.

5.1.2 Monthly Monitoring

Monthly sampling of the two active extraction wells (TW-3D and PE-1) will continue to be performed during the first 2 weeks of each month.

5.1.3 Well Inspections

Inspection of monitoring wells will be completed during each regularly scheduled sampling event but not less than quarterly (DTSC, 2013; CH2M HILL, 2005a-b). Necessary repairs will be done in a timely manner.

5.2 Surface Water Monitoring Program

The Second Quarter 2014 surface water monitoring event is planned at locations in the RMP monitoring network for May 2015. Results will be reported in the Second Quarter 2015 monitoring report.

5.3 Performance Monitoring Program

5.3.1 Extraction

Per DTSC direction, PG&E will continue to operate wells TW-3D and PE-1 at a target combined pumping rate of 135 gpm during Second Quarter 2015, except for periods when planned and unplanned downtime occur. Extracted groundwater treated at the IM-3 facility will be discharged into the IM-3 injection wells in accordance with compliance requirements of the waste discharge applicable, relevant, and appropriate requirements. Saline water and solids generated as byproducts of the treatment process will continue to be transported for offsite disposal.

PG&E will balance the pumping rates between wells TW-3D and PE-1 to maintain the target pumping rate and to maintain the DTSC-specified hydraulic gradients across the Alluvial Aquifer. Well TW-2D will serve as a backup to extraction wells TW-3D and PE-1.

5.3.2 Transducer Download

Downloads of the transducers in the key gradient control wells (MW-27-085, MW-31-135, MW-33-150, MW-34-100, and MW-45-095) will continue to be conducted via telemetry during Second Quarter 2015. Downloads of the remainder of the transducers will occur during the first week of each month during Second Quarter 2015.

SECTION 6

6 References

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Tables

Table 1-1

Topock Monitoring Reporting Schedule
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Program	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Groundwater Monitoring Program	January - March	April - June	July - October	November - December
Surface Water Monitoring Program	January - March	April - June	July - October	November - December
Performance Monitoring Program	January - March	April - June	July - October	November - December
IM-3 Monitoring (Chromium removed)	January - February	March - May	June - September	October - December

TABLE 3-1
Groundwater Sampling Results, February 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-9	SA	02-Dec-14	MP	210	210	2,700	-68	7.4
MW-10	SA	14-May-14	3V	260	250	2,400	57	7.2
		14-May-14 FD	3V	260	260	2,400	FD	FD
		02-Dec-14	MP	200	220	2,400	-66	7.4
MW-11	SA	02-Dec-14	MP	130	120	2,100	-5	7.2
		02-Dec-14 FD	MP	130	120	2,100	FD	FD
MW-12	SA	25-Feb-14	3V	2,560	2,480	7,000	84	8.0
		01-May-14	3V	2,400	2,200	6,000	-19	8.1
		15-Dec-14	MP	2,300	2,300	7,100	-59	7.6
MW-13	SA	13-Nov-14	MP	21.0	21.0	2,000	30	7.3
MW-14	SA	12-Nov-14	MP	15.0	16.0	1,900	12	7.5
MW-15	SA	11-Nov-14	MP	13.0	13.0	1,700	28	7.4
MW-16	SA	22-Apr-14	3V	9.9	9.7	---	44	7.6
MW-17	SA	23-Apr-14	3V	12.0	12.0	---	36	7.9
MW-18	SA	13-Nov-14	MP	21.0	21.0	1,300	24	7.5
MW-19	SA	28-Apr-14	3V	550	520	---	77	7.3
		10-Dec-14	MP	630	680	2,300	-78	7.6
MW-20-70	SA	07-May-14	3V	2,200	2,400	1,600	-7	7.5
		15-Dec-14	MP	2,000	2,100	1,900	-86	7.7
MW-20-100	MA	07-May-14	3V	2,900	2,900	2,400	-40	7.2
		15-Dec-14	MP	1,900	1,900	2,600	-83	7.5
MW-20-130	DA	12-May-14	3V	9,100	9,000	9,900	-85	7.5
		15-Dec-14	MP	6,600	6,600	11,000	-150	7.5
		15-Dec-14 FD	MP	6,500	6,300	11,000	FD	FD
MW-21	SA	19-Feb-14	3V	2.6	3.5	---	8.0	7.1
		22-Apr-14	3V	1.9	1.8	8,300	-190	7.2
		11-Nov-14	MP	2.4	2.7	9,300	-13	7.1
MW-22	SA	30-Apr-14	3V	ND (1.0)	ND (1.0)	---	-160	6.8
		18-Dec-14	MP	ND (1.0)	ND (5.0)	27,000	-42	6.6
MW-23-060	BR	13-Feb-14	3V	34.9	38.0	---	70	9.4
		22-Apr-14	3V	39.0	34.0	---	21	9.2
		10-Nov-14	3V	38.0	32.0	15,000	-62	9.2

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, February 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-23-080	BR	13-Feb-14	3V	8.4	9.0	---	16	10.2
		22-Apr-14	3V	15.0	13.0	---	-60	10.1
		10-Nov-14	3V	5.3	5.2	15,000	-220	10.0
MW-24A	SA	04-Nov-14	MP	ND (0.20)	ND (5.0)	1,800	-200	8.1
MW-24B	DA	18-Dec-14	MP	ND (1.0)	5.4	18,000	-250	8.3
MW-24BR	BR	20-Feb-14	3V	ND (1.0)	ND (1.0)	---	-250	8.0
		29-Apr-14	3V	ND (1.0)	ND (1.0)	---	-250	8.0
		04-Dec-14	3V	ND (1.0)	ND (1.0)	14,000	-190	7.9
MW-25	SA	02-Dec-14	MP	140	130	1,600	-42	7.4
MW-26	SA	05-May-14	3V	2,200	2,200	3,600	-8	7.3
		15-Dec-14	MP	2,400	2,300	4,300	-60	7.4
		15-Dec-14 FD	MP	2,200	2,300	4,300	FD	FD
MW-27-20	SA	14-Apr-14	3V	ND (0.20)	ND (1.0)	1,000	4.0	7.5
		04-Nov-14	MP	ND (0.20)	ND (1.0)	890	-21	7.5
MW-27-60	MA	10-Feb-14	3V	ND (0.20)	ND (1.0)	860	-180	7.6
		14-Apr-14	3V	ND (0.20)	ND (1.0)	920	-190	7.6
		14-Apr-14 FD	3V	ND (0.20)	ND (1.0)	900	FD	FD
		04-Nov-14	MP	ND (0.20)	ND (1.0)	970	-120	7.6
		04-Nov-14 FD	MP	ND (0.20)	ND (1.0)	980	FD	FD
MW-27-85	DA	10-Feb-14	3V	ND (1.0)	ND (1.0)	9,600	-280	7.3
		14-Apr-14	3V	ND (1.0)	ND (1.0)	11,000	-230	7.3
		04-Nov-14	MP	ND (0.20)	ND (1.0)	8,500	-25	7.4
MW-28-25	SA	15-Apr-14	3V	ND (0.20)	ND (1.0)	910	-240	7.3
		11-Nov-14	MP	ND (0.20)	ND (1.0)	1,000	110	7.1
MW-28-90	DA	12-Feb-14	3V	ND (0.20)	ND (1.0)	7,000	-54	7.3
		15-Apr-14	3V	ND (0.20)	ND (1.0)	6,700	-220	7.2
		15-Apr-14 FD	3V	ND (0.20)	ND (1.0)	6,600	FD	FD
		11-Nov-14	MP	ND (0.20)	ND (1.0)	6,200	-28	7.1
MW-29	SA	16-Apr-14	3V	ND (0.20)	ND (1.0)	2,300	-170	7.3
		10-Nov-14	MP	ND (0.20)	ND (1.0)	2,100	-110	7.3
MW-30-30	SA	14-Apr-14	3V	0.21	ND (1.0)	6,800	-260	7.8
		10-Nov-14	MP	0.21	ND (1.0)	10,000	-120	7.6
MW-30-50	MA	10-Nov-14	MP	ND (0.20)	ND (1.0)	1,000	7.3	7.6

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Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-30-50	MA	10-Nov-14 FD	MP	ND (0.20)	ND (1.0)	1,000	FD	FD
MW-31-60	SA	12-May-14	3V	270	270	---	-30	7.5
		03-Dec-14	MP	600	660	2,700	-10	7.7
MW-31-135	DA	05-Nov-14	MP	12.0	12.0	10,000	-200	7.8
MW-32-20	SA	11-Nov-14	MP	ND (1.0)	ND (5.0)	37,000	-94	6.8
		11-Nov-14 FD	MP	ND (1.0)	ND (5.0)	37,000	FD	FD
MW-32-35	SA	16-Apr-14	3V	ND (1.0)	ND (1.0)	---	-190	7.1
		11-Nov-14	MP	ND (1.0)	ND (1.0)	11,000	-110	7.1
MW-33-40	SA	12-Feb-14	3V	0.28	ND (1.0)	7,100	120	8.0
		17-Apr-14	3V	ND (0.20)	ND (1.0)	5,600	-170	8.1
		11-Nov-14	MP	ND (1.0)	ND (1.0)	14,000	100	7.6
MW-33-90	MA	12-Feb-14	3V	13.3	15.5	9,900	140	7.4
		21-Apr-14	3V	11.0	10.0	8,800	-230	7.2
		21-Apr-14 FD	3V	12.0 J	9.8 J	8,700	FD	FD
		12-Nov-14	MP	7.9	7.7	9,300	140	7.4
MW-33-150	DA	12-Feb-14	3V	9.7	10.6	16,000	170	7.5
		12-Feb-14 FD	3V	9.4	10.8	16,000	FD	FD
		17-Apr-14	3V	12.0 J	9.6 J	14,000	-290	7.5
		12-Nov-14	MP	0.86	ND (1.0)	14,000	110	7.4
MW-33-210	DA	12-Feb-14	3V	11.6	13.5	18,000	130	7.4
		21-Apr-14	3V	10.0	8.4	17,000	-300	7.3
		12-Nov-14	MP	13.0	12.0	18,000	140	7.4
MW-34-55	MA	06-Nov-14	MP	ND (0.20)	ND (1.0)	840	-35	7.6
MW-34-80	DA	10-Feb-14	3V	ND (0.20)	ND (1.0)	---	-290	7.4
		17-Apr-14	3V	ND (0.20)	ND (1.0)	---	-280	7.3
		06-Nov-14	MP	ND (0.20)	ND (1.0)	5,900	-4	7.3
MW-34-100	DA	10-Feb-14	3V	159	170	---	-160	7.7
		17-Apr-14	3V	3.0	3.5	---	-220	7.5
		02-Oct-14	MP	100	89.0	---	-230	7.4
		01-Dec-14	MP	220	230	17,000	-62	7.6
		01-Dec-14 FD	MP	230	220	17,000	FD	FD
		16-Feb-15	MP	230	210	---	-270	8.0
MW-35-60	SA	17-Feb-14	3V	21.1	21.8	6,200	98	6.9

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Groundwater Sampling Results, February 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-35-60	SA	17-Feb-14 FD	3V	21.4	20.4	6,400	FD	FD
		24-Apr-14	3V	25.0	24.0	5,600	0.0	7.4
		24-Apr-14 FD	3V	25.0	22.0	5,700	FD	FD
		13-Nov-14	MP	21.0	20.0	6,700	-97	7.3
MW-35-135	DA	24-Apr-14	3V	29.0	25.0	---	-86	7.5
		13-Nov-14	MP	30.0	28.0	10,000	-200	7.6
MW-36-20	SA	15-Dec-14	MP	ND (0.20)	ND (1.0)	11,000	-130	7.5
MW-36-40	SA	15-Dec-14	MP	0.34	ND (1.0)	1,200	-110	7.9
MW-36-50	MA	15-Dec-14	MP	ND (0.20)	ND (1.0)	1,200	-35	7.7
MW-36-70	MA	15-Dec-14	MP	ND (0.20)	ND (1.0)	1,000	-24	7.8
MW-36-90	DA	17-Apr-14	3V	ND (0.20)	ND (1.0)	---	-310	8.2
		15-Dec-14	MP	ND (0.20)	ND (1.0)	1,200	16	8.5
MW-36-100	DA	17-Apr-14	3V	48.0	47.0	7,000	-360	7.3
		13-Nov-14	MP	65.0	62.0	7,400	-20	7.2
MW-37S	MA	12-Nov-14	MP	11.0	11.0	5,500	-88	7.6
MW-37D	DA	10-Apr-14	3V	110	99.0	15,000	-190	7.6
		02-Dec-14	MP	8.0	7.5	14,000	-190	7.6
MW-38S	SA	14-May-14	3V	1.5	2.1	---	-260	7.6
		22-Sep-14	3V	ND (0.20)	ND (1.0)	---	---	7.9
		05-Nov-14	3V	ND (0.20)	ND (1.0)	1,500	-260	7.8
		09-Feb-15	3V	ND (0.20)	ND (1.0)	---	-230	7.5
MW-38D	DA	14-May-14	3V	17.0	14.0	---	-310	8.0
		05-Nov-14	3V	17.0	15.0	20,000	-260	8.3
MW-39-40	SA	16-Dec-14	MP	ND (0.20)	ND (1.0)	1,400	-130	8.0
MW-39-50	MA	16-Dec-14	MP	ND (0.20)	ND (1.0)	1,300	8.9	7.8
MW-39-60	MA	16-Dec-14	MP	ND (0.20)	ND (1.0)	1,500	39	8.0
		16-Dec-14 FD	MP	ND (0.20)	ND (1.0)	1,500	FD	FD
MW-39-70	MA	16-Dec-14	MP	ND (0.20)	ND (1.0)	2,200	25	7.9
MW-39-80	DA	16-Dec-14	MP	ND (0.20)	ND (1.0)	4,400	44	7.7
MW-39-100	DA	01-Dec-14	MP	57.0	49.0	15,000	-310	6.7
MW-40S	SA	04-Dec-14	MP	7.6	7.1	2,100	-37	7.2

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First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-40D	DA	24-Apr-14	3V	130	110	13,000	-13	7.4
		04-Dec-14	MP	160	140	13,000	-89	7.5
MW-41S	SA	04-Nov-14	MP	17.0	17.0	4,900	-110	7.6
MW-41M	DA	04-Nov-14	MP	9.5	8.8	13,000	-110	7.0
		04-Nov-14 FD	MP	9.5	9.0	13,000	FD	FD
MW-41D	DA	10-Apr-14	3V	2.6	2.4	---	-210	7.6
		17-Dec-14	MP	ND (1.0)	1.0	22,000	-94	7.3
MW-42-30	SA	05-Nov-14	MP	0.54	ND (1.0)	2,400	-170	8.0
MW-42-55	MA	11-Feb-14	3V	ND (0.20)	2.3	---	-290	8.1
		14-Apr-14	3V	0.23	1.6	---	-210	8.0
		06-Nov-14	MP	0.35	2.8	1,200	-71	8.2
MW-42-65	MA	11-Feb-14	3V	ND (0.20)	ND (1.0)	---	-350	7.3
		14-Apr-14	3V	ND (0.20)	ND (1.0)	---	-220	7.3
		06-Nov-14	MP	ND (0.20)	ND (1.0)	6,000	22	7.4
MW-43-25	SA	15-Apr-14	3V	ND (0.20)	ND (1.0)	---	-170	7.2
		05-Nov-14	MP	ND (0.20)	ND (1.0)	1,400	-140	7.3
MW-43-75	DA	05-Nov-14	MP	ND (0.20)	ND (1.0)	9,200	-87	7.1
MW-43-90	DA	15-Apr-14	3V	ND (1.0)	ND (1.0)	---	-160	6.9
		05-Nov-14	MP	ND (1.0)	ND (1.0)	15,000	-40	6.9
MW-44-70	MA	16-Apr-14	3V	ND (0.20)	ND (1.0)	---	-290	7.4
		11-Nov-14	MP	ND (0.20)	ND (1.0)	2,000	29	7.6
MW-44-115	DA	11-Feb-14	3V	41.6	42.9	11,000	-370	7.9
		16-Apr-14	3V	40.0	37.0	11,000	-300	7.8
		23-Sep-14	MP	37.0	32.0	---	---	8.0
		23-Sep-14 FD	MP	37.0	31.0	---	FD	FD
		12-Nov-14	MP	32.0	30.0	11,000	52	7.9
		17-Feb-15	MP	37.0	31.0	---	-200	7.1
		17-Feb-15 FD	MP	37.0	31.0	---	FD	FD
MW-44-125	DA	11-Feb-14	3V	ND (1.0)	5.5	11,000	-150	7.8
		11-Feb-14 FD	3V	ND (1.0)	5.6	11,000	FD	FD
		16-Apr-14	3V	ND (0.20)	5.5	9,200	-230	7.5
		16-Apr-14 FD	3V	ND (0.20)	5.1	9,200	FD	FD
		12-Nov-14	MP	4.0 J	5.9	8,100	-51	7.5

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TABLE 3-1
Groundwater Sampling Results, February 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-44-125	DA	12-Nov-14 FD	MP	2.9 J	4.8	8,400	FD	FD
MW-46-175	DA	11-Feb-14	3V	35.6	38.0	18,000	-400	8.3
		11-Feb-14 FD	3V	35.4	39.7	18,000	FD	FD
		15-Apr-14	3V	21.0	19.0	19,000	-330	8.2
		23-Sep-14	MP	14.0	13.0	---	-300	8.4
		13-Nov-14	MP	23.0	25.0	19,000	65	8.2
		16-Feb-15	MP	25.0	21.0	---	-270	8.2
MW-46-205	DA	15-Apr-14	3V	5.5	4.8	---	-420	8.3
		13-Nov-14	MP	1.5	1.9	2,200	130	8.1
MW-47-55	SA	23-Apr-14	3V	16.0	14.0	---	-11	7.4
		11-Nov-14	MP	16.0	16.0	4,600	-74	7.5
MW-47-115	DA	23-Apr-14	3V	23.0	20.0	---	-180	7.5
		23-Apr-14 FD	3V	24.0	20.0	---	FD	FD
		11-Nov-14	MP	19.0	17.0	13,000	-290	7.3
MW-48	BR	20-Feb-14	3V	ND (1.0)	ND (1.0)	---	130	7.5
		23-Apr-14	3V	ND (1.0)	ND (1.0)	---	-200	6.6
		06-Nov-14	3V	ND (1.0)	ND (1.0)	16,000	-83	7.0
MW-49-135	DA	22-Dec-14	MP	2.3	2.0	14,000	-230	7.7
MW-49-275	DA	17-Dec-14	MP	ND (1.0)	1.2	27,000	-150	8.0
MW-49-365	DA	17-Dec-14	MP	ND (1.0)	ND (5.0)	39,000	-190	7.8
		17-Dec-14 FD	MP	ND (1.0)	ND (5.0)	39,000	FD	FD
MW-50-095	MA	23-Apr-14	3V	13.0	12.0	---	-10	7.7
		11-Nov-14	MP	13.0	12.0	4,900	-73	7.5
MW-50-200	DA	26-Feb-14	3V	7,010	6,940	---	-70	7.3
		12-May-14	3V	7,400	7,200	---	-7	7.7
		16-Dec-14	MP	4,800	5,200	21,000	-7	7.7
MW-51	MA	12-May-14	3V	4,800	4,700	9,900	-50	7.5
		15-Dec-14	MP	4,400	4,800	12,000	-130	7.5
MW-52S	MA	30-Apr-14	Slant	ND (0.20)	ND (1.0)	---	-200	6.8
		17-Dec-14	Slant	ND (1.0)	ND (1.0)	9,100	-88	6.8
MW-52M	DA	30-Apr-14	Slant	ND (1.0)	ND (1.0)	---	-280	7.4
		17-Dec-14	Slant	ND (1.0)	ND (1.0)	16,000	-120	7.5
MW-52D	DA	30-Apr-14	Slant	ND (1.0)	ND (1.0)	---	-260	7.7

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Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-52D	DA	17-Dec-14	Slant	ND (1.0)	ND (1.0)	22,000	-150	7.9
MW-53M	DA	30-Apr-14	Slant	ND (1.0)	ND (1.0)	---	-240	7.9
		17-Dec-14	Slant	ND (1.0)	ND (1.0)	20,000	-160	8.0
MW-53D	DA	30-Apr-14	Slant	ND (1.0)	ND (1.0)	---	-260	8.2
		17-Dec-14	Slant	ND (1.0)	ND (5.0)	27,000	-150	8.2
MW-54-85	DA	09-Apr-14	3V	ND (1.0) J	ND (1.0)	9,230 J	-220	7.6
		18-Nov-14	MP	ND (0.20)	ND (1.0)	10,600	-220	7.3
		18-Nov-14 FD	MP	ND (0.20)	ND (1.0)	10,500	FD	FD
MW-54-140	DA	09-Apr-14	3V	ND (1.0) J	ND (1.0)	12,300 J	-230	7.7
		09-Apr-14 FD	3V	ND (1.0) J	ND (1.0)	12,200 J	FD	FD
		18-Nov-14	MP	ND (0.20)	ND (1.0)	12,900	-240	7.7
MW-54-195	DA	09-Apr-14	3V	ND (1.0) J	ND (1.0)	18,300 J	-240	8.0
		18-Nov-14	MP	ND (2.0)	ND (1.0)	19,500	-290	7.9
MW-55-45	MA	18-Nov-14	MP	ND (1.0)	ND (1.0)	1,470	-270	7.4
MW-55-120	DA	18-Nov-14	MP	7.5	7.2	8,930	-87	7.7
MW-56S	SA	10-Apr-14	Slant	ND (1.0) J	5.3	6,390 J	-230	7.0
		18-Dec-14	Slant	ND (0.20)	ND (1.0)	7,080	-72	7.0
MW-56M	DA	10-Apr-14	Slant	ND (1.0) J	1.8	14,400 J	-250	7.3
		18-Dec-14	Slant	ND (1.0)	ND (5.0)	14,100	-90	7.2
MW-56D	DA	10-Apr-14	Slant	ND (1.0) J	ND (1.0)	19,800 J	-260	7.7
		18-Dec-14	Slant	ND (1.0)	ND (5.0)	2,040	-140	7.6
MW-57-070	BR	24-Feb-14	3V	394	409	---	61	7.2
		28-Apr-14	3V	430	460	---	86	7.0
		10-Dec-14	3V	530	520	2,700	-30	7.0
MW-57-185	BR	13-Feb-14	3V	9.2	10.5	18,000	11	8.8
		22-Apr-14	3V	8.8	7.8	17,000	-81	8.8
		10-Nov-14	3V	9.5	8.9	17,000	-220	9.2
MW-58BR	BR	25-Feb-14	MP	2.3	3.1	---	-160	7.5
		06-May-14	MP	0.87	ND (1.0)	---	-270	7.6
		24-Sep-14	MP	2.1	2.2	---	---	7.5
		09-Dec-14	MP	3.6	3.0	8,800	-180	7.6
		10-Feb-15	MP	3.6	3.5	---	-220	7.6
MW-59-100	SA	25-Feb-14	3V	3,740	3,780	9,900	36	6.4

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Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-59-100	SA	07-May-14	3V	4,000	4,000	9,600	-10	7.0
		15-Dec-14	MP	4,100	4,100	11,000	-30	7.1
		15-Dec-14 FD	MP	4,200	3,900	11,000	FD	FD
MW-60-125	BR	25-Feb-14	3V	1,030	1,070	9,100	51	7.4
		01-May-14	3V	1,200	1,100	7,700	-42	7.5
		10-Dec-14	3V	950	980	8,900	-130	7.4
MW-60BR-245	BR	19-Feb-14	3V	ND (1.0)	2.0	17,000	-260	8.1
		29-Apr-14	3V	ND (1.0)	1.2	16,000	-76	8.1
		25-Sep-14	3V	1.5	3.0	---	---	8.4
		04-Dec-14	3V	ND (1.0)	ND (1.0)	16,000	-240	7.8
		10-Feb-15	3V	3.6	5.2	---	-240	7.9
MW-61-110	BR	19-Feb-14	3V	588	619	15,000	-76	7.2
		29-Apr-14	3V	470	460	15,000	-160	7.5
		10-Dec-14	3V	570	540	16,000	-120	7.1
MW-62-065	BR	20-Feb-14	3V	469	474	---	63	7.3
		29-Apr-14	3V	550	550	---	-1	7.4
		23-Sep-14	3V	540	500	---	---	7.4
		09-Dec-14	3V	530	500	6,000	-110	7.4
		16-Feb-15	3V	520	510	---	-30	7.1
		16-Feb-15 FD	3V	530	510	---	FD	FD
MW-62-110	BR	19-Feb-14	Flute	976	927	8,600	110	7.6
		07-May-14	Flute	910	940	8,000	30	7.1
		23-Sep-14	Flute	1,000	1,000	---	---	7.5
		09-Dec-14	Flute	1,200	1,200	8,500	-50	6.9
		11-Feb-15	Flute	1,200	1,300	---	72	7.0
MW-62-190	BR	19-Feb-14	Flute	ND (1.0)	ND (1.0)	17,000	-82	7.1
		07-May-14	Flute	ND (1.0)	ND (1.0)	16,000	-65	7.2
		09-Dec-14	Flute	ND (1.0)	ND (1.0)	17,000	-59	6.7
MW-63-065	BR	12-Feb-14	3V	1.2	1.5	6,700	130	7.2
		09-Apr-14	3V	1.4	1.1	6,600	-1	7.1
		22-Sep-14	3V	1.6	1.4	---	---	7.2
		05-Nov-14	3V	1.6	1.6	6,400	-21	7.0
		10-Feb-15	3V	1.5	1.9	---	-70	7.2
MW-64BR	BR	26-Feb-14	MP	ND (1.0)	ND (1.0)	---	16	7.4

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, February 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-64BR	BR	06-May-14	MP	ND (1.0)	ND (1.0)	---	-200	7.5
		30-Sep-14	MP	ND (1.0)	ND (1.0)	---	-190	7.3
		08-Dec-14	MP	ND (1.0)	ND (1.0)	14,000	-140	7.3
		18-Feb-15	MP	ND (1.0)	1.3	---	-190	7.3
MW-65-160	SA	19-Feb-14	3V	125	126	4,000	11	7.0
		24-Apr-14	3V	110	95.0	3,600	-17	7.1
		25-Sep-14	MP	90.0	83.0	---	---	7.3
		03-Dec-14	MP	97.0	92.0	3,400	-82	7.2
		24-Mar-15	MP	140	120	---	-130	7.0
MW-65-225	DA	19-Feb-14	3V	513	529	11,000	-59	7.1
		29-Apr-14	3V	460	450	12,000	-57	7.3
		25-Sep-14	MP	130	110	---	---	7.5
		03-Dec-14	MP	120	130	15,000	-60	7.4
		17-Feb-15	MP	150	140	---	-140	7.3
MW-66-165	SA	19-Feb-14	3V	594	638	4,400	70	7.0
		01-May-14	3V	750	720	3,800	110	7.2
		01-May-14 FD	3V	720	750	3,800	FD	FD
		10-Dec-14	MP	590	580	4,400	-73	7.2
MW-66-230	DA	26-Feb-14	3V	5,730	6,570	20,000	67	7.6
		07-May-14	3V	6,700	6,700	17,000	-130	8.0
		22-Dec-14	MP	5,500	6,400	19,000	-81	7.6
MW-66BR-270	BR	26-Feb-14	3V	ND (1.0)	ND (1.0)	18,000	-120	9.7
		13-May-14	3V	ND (1.0)	ND (1.0)	15,000	-350	9.6
		16-Dec-14	3V	ND (1.0)	ND (5.0)	18,000	-380	8.8
MW-67-185	SA	24-Feb-14	3V	1,960	2,150	5,600	150	7.2
		05-May-14	3V	2,300	2,500	5,000	-32	7.2
		11-Dec-14	MP	1,900	1,600	6,200	-48	7.1
MW-67-225	MA	24-Feb-14	3V	2,890	3,120	7,500	120	7.3
		06-May-14	3V	3,200	3,300	6,300	-81	7.4
		11-Dec-14	MP	3,200	3,200	7,300	-130	7.6
MW-67-260	DA	24-Feb-14	3V	1,940	2,010	18,000	-90	7.9
		05-May-14	3V	2,000	1,900	15,000	-250	8.5
		11-Dec-14	MP	740	680	18,000	-200	8.4
MW-68-180	SA	27-Feb-14	3V	22,900	23,800	4,300	28	7.3

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, February 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-68-180	SA	12-May-14	3V	10,000	11,000	3,000	34	7.3
		30-Sep-14	MP	27,000	28,000	---	5.0	7.3
		09-Dec-14	MP	30,000	31,000	4,300	-58	7.6
		18-Feb-15	MP	31,000	33,000	---	-54	7.5
MW-68-240	DA	25-Feb-14	3V	2,020	2,050	17,000	-40	7.1
		06-May-14	3V	2,200	2,100	14,000	-190	7.3
		06-May-14 FD	3V	2,200	2,100	14,000	FD	FD
		18-Dec-14	MP	2,100	2,200	16,000	-81	7.1
MW-68BR-280	BR	27-Feb-14	3V	ND (1.0)	ND (1.0)	22,000	-120	8.5
		13-May-14	3V	ND (1.0)	ND (1.0)	19,000	-200	8.3
		18-Dec-14	3V	ND (1.0)	ND (5.0)	21,000	-200	8.7
MW-69-195	BR	19-Feb-14	3V	893	905	3,500	67	7.2
		01-May-14	3V	1,000	1,000	3,100	53	7.1
		25-Sep-14	3V	860	950	---	---	7.3
		25-Sep-14 FD	3V	930	990	---	FD	FD
		11-Dec-14	3V	950	970	3,600	0.0	7.1
		17-Feb-15	3V	930	800	---	-75	7.6
MW-70-105	BR	17-Feb-14	3V	145	136	3,500	-180	7.9
		28-Apr-14	3V	75.0	70.0	3,200	-130	7.8
		02-Dec-14	3V	130	120	3,400	-240	7.7
MW-70BR-225	BR	25-Feb-14	3V	1,900	2,080	14,000	-90	7.1
		05-May-14	3V	2,400	2,500	12,000	-160	7.3
		16-Dec-14	3V	1,900	2,200	14,000	-190	7.4
MW-71-035	SA	18-Feb-14	3V	0.32	ND (1.0)	8,400	-28	8.7
		24-Apr-14	3V	1.0	1.0	7,700	20	7.3
		06-Nov-14	MP	1.2	15.0	14,000	-69	6.7
MW-72-080	BR	18-Feb-14	3V	121	125	16,000	14	7.7
		24-Apr-14	3V	100	82.0	16,000	-12	7.5
		22-Sep-14	3V	140	120	---	---	7.7
		01-Dec-14	3V	130	110	16,000	-280	7.6
		11-Feb-15	3V	130	110	---	-150	7.9
MW-72BR-200	BR	17-Feb-14	3V	7.1	7.5	15,000	-95	8.2
		17-Feb-14 FD	3V	7.1	7.0	15,000	FD	FD
		21-Apr-14	3V	6.2 J	4.7 J	14,000	26	8.4

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, February 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
MW-72BR-200	BR	24-Sep-14	3V	5.4	4.5	---	---	8.3
		17-Nov-14	3V	5.8	6.0	16,000	-300	8.2
		11-Feb-15	3V	6.5	5.6	---	-280	8.3
MW-73-080	BR	18-Feb-14	3V	48.5	49.2	11,000	4.0	7.2
		29-Apr-14	3V	53.0	48.0	11,000	89	7.1
		23-Sep-14	3V	27.0	23.0	---	100	7.1
		02-Dec-14	3V	41.0	37.0	10,000	11	6.6
		10-Feb-15	3V	21.0	20.0	---	-86	8.2
MW-74-240	BR	26-Feb-14	3V	ND (0.20)	ND (1.0)	880	-81	8.6
		01-May-14	3V	ND (0.20)	ND (1.0)	800	-160	8.1
		11-Dec-14	3V	ND (0.20)	ND (1.0)	990	-190	8.3
OW-3S	SA	12-Nov-14	3V	23.0	23.0	1,400	18	7.7
		12-Nov-14 FD	3V	23.0	24.0	1,400	FD	FD
OW-3M	MA	12-Nov-14	MP	16.0	15.0	5,700	-110	7.7
OW-3D	DA	12-Nov-14	MP	11.0	10.0	8,800	-140	7.7
PE-1	DA	04-Feb-14	Tap	5.6	6.0	3,820	---	---
		04-Mar-14	Tap	4.8	4.8	3,680	---	---
		08-Apr-14	Tap	4.0	4.2	4,150	---	---
		06-May-14	Tap	3.9	4.3	4,540	---	---
		03-Jun-14	Tap	3.7	4.1	4,480	---	---
		01-Jul-14	Tap	3.6	3.7	4,420	---	---
		05-Aug-14	Tap	3.7	3.9	4,320	---	---
		02-Sep-14	Tap	3.8	4.0	4,260	---	---
		07-Oct-14	Tap	3.7	4.2	4,160	---	---
		04-Nov-14	Tap	4.0	4.7	4,230	---	---
		02-Dec-14	Tap	4.2	4.9	4,230	---	---
		06-Jan-15	Tap	5.1	4.2	4,300	---	---
		03-Feb-15	Tap	4.7	3.8	3,900	---	---
		17-Mar-15	Tap	4.0	3.4	3,700	---	---
PGE-7BR	BR	04-Dec-14	3V	ND (1.0)	ND (1.0)	17,000	-190	6.9
PGE-8 [a]	BR	07-Jan-15	3V	ND (1.0)	ND (1.0)	17,000	-420	8.2
Park Moabi-3	MA	23-Dec-14	Tap	9.2	8.6	1,500	-38	7.4
		17-Mar-15	Tap	9.3	8.4 UF	---	-42	7.3
Park Moabi-4	MA	23-Dec-14	Tap	18.0	16.0	2,000	-39	7.5

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, February 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Selected Field Parameters	
							ORP (mV)	Field pH
Park Moabi-4	MA	17-Mar-15	Tap	18.0	17.0 UF	---	-46	7.4
TW-1	SA-MA-DA	20-Feb-14	3V	2,500	2,620	7,200	72	7.1
		13-May-14	3V	2,800	2,700	6,000	-140	7.3
		22-Dec-14	3V	2,100	2,200	7,200	-120	7.3
TW-2S [a]	SA-MA	13-Jan-15	Tap	590	570	2,100	-42	7.5
TW-2D	DA	15-Dec-14	Tap	48.0	44.0	7,300	99	7.6
		15-Dec-14 FD	Tap	47.0	43.0	7,300	FD	FD
TW-3D	DA	04-Feb-14	Tap	816	804	7,570	---	---
		04-Mar-14	Tap	816	752	7,980	---	---
		08-Apr-14	Tap	662	772	7,810	---	---
		06-May-14	Tap	601	742	8,270	---	---
		03-Jun-14	Tap	725	737	8,090	---	---
		01-Jul-14	Tap	720	736	8,180	---	---
		05-Aug-14	Tap	704	695	8,020	---	---
		02-Sep-14	Tap	703	729	8,070	---	---
		07-Oct-14	Tap	720	733	7,910	---	---
		04-Nov-14	Tap	711	706	7,990	---	---
		02-Dec-14	Tap	733	757	8,110	---	---
		06-Jan-15	Tap	790	790	8,400	---	---
		03-Feb-15	Tap	790	760	7,300	---	---
		17-Mar-15	Tap	740	690	7,800	---	---

Refer to table footnotes for data qualifier explanation.

Notes:

(---) = data not collected, available, rejected, or field instrument malfunction.
3V = three volume.
FD = field duplicate sample.
Flute = flexible liner underground technologies sampling system.
J = concentration or reporting limit (RL) estimated by laboratory or data validation.
mV = millivolts.
MP = minimal drawdown/micro purge.
ND = not detected at listed RL.
ORP = oxidation-reduction potential.
RL = reporting limit.
Slant = slant (non vertical) wells MW-52, MW-53, MW-56 are sampled from dedicated Barcad screens, using a peristaltic pump.
Tap = sampled from tap or port of extraction or supply well.
UF = unfiltered.
µg/L = micrograms per liter.
µS/cm = microSiemens per centimeter.

Beginning February 1, 2008, hexavalent chromium samples are field-filtered per DTSC-approved change from analysis Method SW7199 to E218.6.

The RLs for certain hexavalent chromium results from Method E218.6 analyses have been elevated above the standard RL of 0.2 µg/L due to required sample dilution to accommodate matrix interferences.

Starting in Third Quarter 2014, the groundwater sample collection method was switched from the traditional three-volume purge method (3V) to the minimal drawdown, or micropurge (MP) method at many short screen wells screened in alluvial sediments. The method for purging prior to sample collection is indicated in the sample method column of this table.

[a] Fourth Quarter 2014 data were collected January 2015 due to field logistical issue.

ORP is reported to two significant figures. Specific conductance is reported to three significant figures.

Wells are assigned to separate aquifer zones for results reporting:
SA: shallow interval of Alluvial Aquifer.
MA: mid-depth interval of Alluvial Aquifer.
DA: deep interval of Alluvial Aquifer.
BR: well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

Refer to table footnotes for data qualifier explanation.

TABLE 3-2

Groundwater COPCs and In Situ Byproducts Sampling Results, First Quarter 2015

First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Arsenic Dissolved (µg/L)	Molybdenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-34-100	DA	16-Feb-15	MP	1.5	76.0	ND (2.5)	ND (0.50)	0.610
MW-38S	SA	09-Feb-15	3V	14.0	43.0	ND (0.50)	230	ND (0.050)
MW-44-115	DA	17-Feb-15	MP	5.6	88.0	ND (2.5)	ND (0.50)	0.230
		17-Feb-15 FD	MP	5.5	86.0	ND (2.5)	ND (0.50)	0.230
MW-46-175	DA	16-Feb-15	MP	---	200	ND (2.5)	---	1.10
MW-58BR	BR	10-Feb-15	MP	1.2	25.0	1.1	390	0.340
MW-60BR-245	BR	10-Feb-15	3V	6.2	62.0	ND (2.5)	ND (0.50)	0.0950
MW-62-065	BR	16-Feb-15	3V	1.5	14.0	3.2	ND (0.50)	4.10
		16-Feb-15 FD	3V	1.5	14.0	3.4	ND (0.50)	4.00
MW-62-110	BR	11-Feb-15	Flute	6.3	43.0	3.6	52.0	3.90
MW-63-065	BR	10-Feb-15	3V	1.4	19.0	0.85	ND (0.50)	0.980
MW-64BR	BR	18-Feb-15	MP	2.8	67.0	ND (0.50)	770	ND (0.050)
MW-65-160	SA	24-Mar-15	MP	0.67	25.0	6.9	ND (0.50)	13.0
MW-65-225	DA	17-Feb-15	MP	2.8	55.0	ND (2.5)	ND (0.50)	2.10
MW-68-180	SA	18-Feb-15	MP	2.4	46.0	15.0	ND (0.50)	30.0
MW-69-195	BR	17-Feb-15	3V	2.3	81.0	9.0	ND (0.50) J	16.0
MW-72-080	BR	11-Feb-15	3V	12.0	78.0	ND (2.5)	ND (0.50)	1.00
MW-72BR-200	BR	11-Feb-15	3V	14.0	78.0	ND (2.5)	ND (0.50)	0.160
MW-73-080	BR	10-Feb-15	3V	2.9	23.0	1.9	ND (0.50)	2.00
PE-1	DA	06-Jan-15	Tap	---	---	---	33.0	ND (0.050)
		03-Feb-15	Tap	---	---	---	36.0	ND (0.050)
		17-Mar-15	Tap	---	---	---	46.0	ND (0.050)
PGE-8 [a]	BR	07-Jan-15	3V	---	100	ND (12)	---	ND (0.050)
Park Moabi-3	MA	17-Mar-15	Tap	---	---	---	ND (0.50)	3.30
Park Moabi-4	MA	17-Mar-15	Tap	---	---	---	ND (0.50)	2.50
TW-2S [a]	SA-MA	13-Jan-15	Tap	---	15.0	2.8	---	4.30
TW-3D	DA	06-Jan-15	Tap	---	---	---	ND (0.50) J	3.00
		03-Feb-15	Tap	---	---	---	ND (0.50)	3.10
		17-Mar-15	Tap	---	---	---	ND (0.50)	3.60

Notes:

(---) = data not collected, available, or rejected.
3V = three volume.
COPC = contaminants of potential concern.
FD = field duplicate sample.
Flute = flexible liner underground technologies sampling system.
J = concentration or reporting limit estimated by laboratory or data validation.
mg/L = milligrams per liter.
MP = minimal drawdown/micro purge.
ND = not detected at listed reporting limit.
Tap = Sampled from tap or port of extraction or supply well.
µg/L = micrograms per liter.

Nitrate samples were analyzed using USEPA Method 4500NO3, except for TW-3D and PE-1, which were analyzed using USEPA Method 300.0. USEPA Method 4500NO3 reports a combination of nitrate and nitrite as nitrogen. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for USEPA Method 4500NO3 are expected to be essentially the same as previous samples analyzed using USEPA Method 300.0 and reported as nitrate as nitrogen.

Starting in Third Quarter 2014, the groundwater sample collection method was switched from the traditional three-volume purge method (3V) to the minimal drawdown, or micropurge (MP) method at many short screen wells screened in alluvial sediments. The method for purging prior to sample collection is indicated in the sample method column of this table.

[a] Fourth Quarter 2014 data were collected January 2015 due to field logistical issues.

The background study upper tolerance limit (UTL) for arsenic is 24.3 µg/L.
The USEPA and California maximum contaminant level (MCL) for arsenic is 10 µg/L.
The background study UTL for molybdenum is 36.3 µg/L.
There is no USEPA or California MCL for molybdenum.
The background study UTL for selenium is 10.3 µg/L.
The USEPA and California MCL for selenium is 50.0 µg/L.
The secondary USEPA and California MCL for manganese is 50 ug/L.
The background study UTL for nitrate as nitrogen is 5.03 mg/L.
The USEPA and California MCL for nitrate as nitrogen is 10 mg/L.
The background study UTL for fluoride is 7.1 mg/L.
The USEPA MCL for fluoride is 4 mg/L, and the California MCL for fluoride is 2 mg/L.

Wells are assigned to separate aquifer zones for results reporting:
SA = shallow interval of Alluvial Aquifer.
MA = mid-depth interval of Alluvial Aquifer.
DA = deep interval of Alluvial Aquifer.
PA = perched aquifer (unsaturated zone).
BR = well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

TABLE 3-3
Surface Water Sampling Results, First Quarter 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
In-channel Locations					
C-BNS-D	01/14/2015	ND (0.20)	ND (1.0)	940	8.2 J
C-BNS-D	02/24/2015	ND (0.20)	ND (1.0)	900	8.3 J
C-CON-S	01/15/2015	ND (0.20)	ND (1.0)	940	8.3 J
C-CON-S	02/25/2015	ND (0.20)	ND (1.0)	860	8.4 J
C-CON-D	01/15/2015	ND (0.20)	ND (1.0)	950	8.2 J
C-CON-D	02/25/2015	ND (0.20)	ND (1.0)	870	8.4 J
C-I-3-S	01/14/2015	ND (0.20)	ND (1.0)	930	8.2 J
C-I-3-S	02/24/2015	ND (0.20)	ND (1.0)	880	8.3 J
C-I-3-D	01/14/2015	ND (0.20)	ND (1.0)	930	8.2 J
C-I-3-D	02/24/2015	ND (0.20)	ND (1.0)	880	8.4 J
C-MAR-S	01/14/2015	ND (0.20)	ND (1.0)	940	8.1 J
C-MAR-S	02/24/2015	ND (0.20)	ND (1.0)	940	8.2 J
C-NR1-S	01/15/2015	ND (0.20)	ND (1.0)	950	8.2 J
C-NR1-S	02/25/2015	ND (0.20)	ND (1.0)	860	8.4 J
C-NR1-D	01/15/2015	ND (0.20)	ND (1.0)	930	8.2 J
C-NR1-D	02/25/2015	ND (0.20)	ND (1.0)	880	8.3 J
C-NR3-S	01/15/2015	ND (0.20)	ND (1.0)	930	8.2 J
C-NR3-S	02/25/2015	ND (0.20)	ND (1.0)	870	8.4 J
C-NR3-D	01/15/2015	ND (0.20)	ND (1.0)	940	8.2 J
C-NR3-D	02/25/2015	ND (0.20)	ND (1.0)	870	8.3 J
C-NR4-S	01/15/2015	ND (0.20)	ND (1.0)	940	8.2 J
C-NR4-S	02/25/2015	ND (0.20)	ND (1.0)	870	8.3 J
C-NR4-D	01/15/2015	ND (0.20)	ND (1.0)	930	8.2 J
C-NR4-D	02/25/2015	ND (0.20)	ND (1.0)	870	8.4 J
C-R22a-S	01/14/2015	ND (0.20)	ND (1.0)	920	8.3 J
C-R22a-S	02/24/2015	ND (0.20)	ND (1.0)	880	8.3 J
C-R22a-D	01/14/2015	ND (0.20)	ND (1.0)	930	8.3 J
C-R22a-D	02/24/2015	ND (0.20)	ND (1.0)	880	8.2 J
C-R27-S	01/14/2015	ND (0.20)	ND (1.0)	940	8.2 J
C-R27-S	02/24/2015	ND (0.20)	ND (1.0)	890	8.3 J
C-R27-D	01/14/2015	ND (0.20)	ND (1.0)	930	8.2 J
C-R27-D	02/24/2015	ND (0.20)	ND (1.0)	890	8.4 J
C-TAZ-S	01/14/2015	ND (0.20)	ND (1.0)	940	8.3 J
C-TAZ-S	02/24/2015	ND (0.20)	ND (1.0)	890	8.4 J
C-TAZ-D	01/14/2015	ND (0.20)	ND (1.0)	940	8.3 J
C-TAZ-D	02/24/2015	ND (0.20)	ND (1.0)	880	8.4 J

TABLE 3-3
Surface Water Sampling Results, First Quarter 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
Shoreline Samples					
R-19	01/15/2015	ND (0.20)	ND (1.0)	940	8.3 J
R-19	02/25/2015	ND (0.20)	ND (1.0)	870	8.4 J
R-28	01/15/2015	ND (0.20)	ND (1.0)	930	8.3 J
R-28	02/25/2015	ND (0.20)	ND (1.0)	880	8.4 J
R63	01/14/2015	ND (0.20)	ND (1.0)	940	8.3 J
R63	02/24/2015	ND (0.20)	ND (1.0)	890	8.4 J
RRB	01/15/2015	ND (0.20)	ND (1.0)	940	8.3 J
RRB	02/25/2015	ND (0.20)	ND (1.0)	880	8.4 J
Other Surface Water Monitoring Locations					
SW1	01/14/2015	ND (0.20)	ND (1.0)	1200	7.6 J
SW1	02/24/2015	ND (0.20)	ND (1.0)	950	8.0 J
SW2	01/14/2015	ND (0.20)	ND (1.0)	990	7.6 J
SW2	02/24/2015	ND (0.20)	ND (1.0)	900	8.3 J

Notes:

J = concentration or reporting limit estimated by laboratory or data validation.
ND = not detected at listed reporting limit.
µg/L = micrograms per liter.
µS/cm = microSiemens per centimeter.

Hexavalent chromium analytical Method USEPA 218.6 (reporting limit 0.2 µg/L for undiluted samples).

Other analytical methods: dissolved chromium - Method SW6020A; specific conductance - USEPA 120.1; pH -SM4500-HB.

pH is reported to two significant figures.

TABLE 3-4
COPCs, In Situ Byproducts and Geochemical Indicator Parameters in Surface Water Samples, First Quarter 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Arsenic, dissolved	Barium, dissolved	Iron, Total	Iron, dissolved	Manganese, dissolved	Molybdenum, dissolved	Nitrate/Nitrite as Nitrogen	Selenium, dissolved	Total suspended solids
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L
In-channel Locations										
C-BNS-D	01/14/2015	2.4	130	41.0	ND (20.0)	ND (0.50)	4.7	0.310	1.4	ND (10.0)
C-BNS-D	02/24/2015	2.5	110	89.0	ND (20.0)	ND (0.50)	4.5	0.450	1.5	ND (10.0)
C-CON-S	01/15/2015	2.3	120	27.0	ND (20.0)	ND (0.50)	4.4	0.380	1.3	ND (10.0)
C-CON-S	02/25/2015	2.4	130	68.0	ND (20.0)	ND (0.50)	4.8	0.460	1.4	ND (10.0)
C-CON-D	01/15/2015	2.6	140	47.0	ND (20.0)	ND (0.50)	4.8	0.350	1.4	ND (10.0)
C-CON-D	02/25/2015	2.4	130	67.0	ND (20.0)	ND (0.50)	4.8	0.450	1.5	ND (10.0)
C-I-3-S	01/14/2015	2.6	130	42.0	ND (20.0)	ND (0.50)	4.6	0.320	1.2	ND (10.0)
C-I-3-S	02/24/2015	2.4	110	53.0	ND (20.0)	ND (0.50)	4.4	0.470	1.4	ND (10.0)
C-I-3-D	01/14/2015	2.4	130	49.0	ND (20.0)	ND (0.50)	4.5	0.340	1.2	ND (10.0)
C-I-3-D	02/24/2015	2.4	110	110	ND (20.0)	ND (0.50)	4.3	0.460	1.4	ND (10.0)
C-MAR-S	01/14/2015	2.3	120	1100	22.0	28.0	4.6	0.400	1.4	52.0
C-MAR-S	02/24/2015	2.3	110	2900	ND (20.0)	41.0	4.5	0.420	1.4	93.0
C-NR1-S	01/15/2015	2.3	130	25.0	ND (20.0)	ND (0.50)	4.6	0.340	1.3	ND (10.0)
C-NR1-S	02/25/2015	2.4	130	68.0	ND (20.0)	ND (0.50)	4.8	0.440	1.4	ND (10.0)
C-NR1-D	01/15/2015	2.4	130	47.0	ND (20.0)	ND (0.50)	4.6	0.350	1.3	ND (10.0)
C-NR1-D	02/25/2015	2.5	130	74.0	ND (20.0)	ND (0.50)	4.9	0.460	1.5	ND (10.0)
C-NR3-S	01/15/2015	2.3	120	28.0	ND (20.0)	ND (0.50)	4.5	0.320	1.5	ND (10.0)
C-NR3-S	02/25/2015	2.5	130	51.0	ND (20.0)	ND (0.50)	5.0	0.430	1.4	ND (10.0)
C-NR3-D	01/15/2015	2.3	120	35.0	ND (20.0)	ND (0.50)	4.6	0.340	1.3	ND (10.0)
C-NR3-D	02/25/2015	2.4	130	78.0	ND (20.0)	ND (0.50)	4.8	0.440	1.5	ND (10.0)
C-NR4-S	01/15/2015	2.3	120	ND (20.0)	ND (20.0)	ND (0.50)	4.4	0.330	1.3	ND (10.0)
C-NR4-S	02/25/2015	2.4	130	43.0	ND (20.0)	ND (0.50)	4.9	0.440	1.5	ND (10.0)
C-NR4-D	01/15/2015	2.5	130	36.0	ND (20.0)	ND (0.50)	4.6	0.340	1.4	ND (10.0)
C-NR4-D	02/25/2015	2.3	120	58.0	ND (20.0)	ND (0.50)	4.5	0.470	1.4	ND (10.0)
C-R22a-S	01/14/2015	2.4	120	39.0	ND (20.0)	ND (0.50)	4.7	0.310	1.3	ND (10.0)
C-R22a-S	02/24/2015	2.4	110	49.0	ND (20.0)	ND (0.50)	4.3	0.440	1.5	ND (10.0)
C-R22a-D	01/14/2015	2.4	130	47.0	ND (20.0)	ND (0.50)	4.6	0.320	1.5	ND (10.0)
C-R22a-D	02/24/2015	2.3	110	55.0	ND (20.0)	ND (0.50)	4.3	0.480	1.5	ND (10.0)
C-R27-S	01/14/2015	2.5	120	30.0	ND (20.0)	ND (0.50)	4.6	0.380	1.2	ND (10.0)
C-R27-S	02/24/2015	2.4	110	81.0	ND (20.0)	ND (0.50)	4.5	0.480	1.4	ND (10.0)
C-R27-D	01/14/2015	2.4	120	42.0	ND (20.0)	ND (0.50)	4.6	0.320	1.5	ND (10.0)
C-R27-D	02/24/2015	2.4	110	87.0	ND (20.0)	ND (0.50)	4.2	0.440	1.4	ND (10.0)
C-TAZ-S	01/14/2015	2.3	120	60.0	ND (20.0)	ND (0.50)	4.5	0.330	1.4	ND (10.0)
C-TAZ-S	02/24/2015	2.3	110	73.0	37.0	ND (0.50)	4.3	0.470	1.4	ND (10.0)
C-TAZ-D	01/14/2015	2.3	120	38.0	ND (20.0)	ND (0.50)	4.6	0.340	1.5	ND (10.0)
C-TAZ-D	02/24/2015	2.4	140	26.0	ND (20.0)	ND (0.50)	4.4	0.440	1.4	ND (10.0)
Shoreline Samples										
R-19	01/15/2015	2.7	130	24.0	26.0	ND (0.50)	4.8	0.350	1.5	ND (10.0)
R-19	02/25/2015	2.4	130	40.0	ND (20.0)	ND (0.50)	4.9	0.430	1.4	ND (10.0)
R-28	01/15/2015	2.4	130	20.0	ND (20.0)	ND (0.50)	4.7	0.330	1.3	ND (10.0)
R-28	02/25/2015	2.3	120	35.0	ND (20.0)	ND (0.50)	4.6	0.440	1.3	ND (10.0)

TABLE 3-4
COPCs, In Situ Byproducts and Geochemical Indicator Parameters in Surface Water Samples, First Quarter 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Arsenic, dissolved	Barium, dissolved	Iron, Total	Iron, dissolved	Manganese, dissolved	Molybdenum, dissolved	Nitrate/Nitrite as Nitrogen	Selenium, dissolved	Total suspended solids
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L
Shoreline Samples										
R63	01/14/2015	2.5	130	82.0 J	ND (20.0)	ND (0.50)	4.5	0.310	1.3	ND (10.0)
R63	02/24/2015	2.4	110	370	ND (20.0)	ND (0.50)	4.5	0.440	1.3	17.0 J
RRB	01/15/2015	2.5	130	23.0	ND (20.0)	ND (0.50)	4.6	0.330	1.3	ND (10.0)
RRB	02/25/2015	2.6	140	43.0	ND (20.0)	ND (0.50)	5.2	0.420	1.7	ND (10.0)

Notes:
COPC = contaminants of potential concern (molybdenum, selenium, and nitrate).
mg/L = milligrams per liter.
ND = not detected at listed reporting limit.
TSS = total suspended solids.
µg/L = micrograms per liter.
USEPA = United States Environmental Protection Agency.

Geochemical indicator parameters (TSS and alkalinity).
In situ byproducts (arsenic, iron and manganese).

USEPA Methods:
Alkalinity - SM2320B.
Metals - SW6010B/SW6020A.
Nitrate - SM4500NO3.
Total Suspended Solids - SM2540D.

TABLE 4-1

Pumping Rate and Extracted Volume for IM System, First Quarter 2015

First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Extraction Well ID	January 2015		February 2015		March 2015		First Quarter 2015	
	Average Pumping Rate[a] (gpm)	Volume Pumped (gal)	Average Pumping Rate[a] (gpm)	Volume Pumped (gal)	Average Pumping Rate[a] (gpm)	Volume Pumped (gal)	Average Pumping Rate[a] (gpm)	Volume Pumped (gal)
TW-02S	0.00	0	0.00	0	0.00	0	0.00	0
TW-02D	0.00	0	0.00	0	0.01	317	0.00	317
TW-03D	103.27	4,609,807	106.69	4,301,829	102.71	4,584,787	104.22	13,496,424
PE-01	27.54	1,229,354	28.01	1,129,488	27.83	1,242,135	27.79	3,600,977
TOTAL	**130.8**	**5,839,162**	**134.7**	**5,431,317**	**130.5**	**5,827,239**	**132.0**	**17,097,717**

Chromium Removed This Quarter (kg)	24.3
Chromium Removed Project to Date (kg)	3720
Chromium Removed This Quarter (lb)	53.6
Chromium Removed Project to Date (lb)	8210

Notes:

DTSC = Department of Toxic Substances Control.
gal = gallons.
gpm = gallons per minute.
IM = Interim Measures.
kg = kilograms.
lb = pounds.

[a] The "Average Pumping Rate" is the overall average during the reporting period, including system downtime, based on flow meter readings.

Chromium removed includes the period of January 1, 2015 through February 28, 2015. DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from January 1, 2015 through February 28, 2015.

TABLE 4-2
Analytical Results for Extraction Wells, January 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date	Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)	Total Dissolved Solids (mg/L)	pH
TW-3D	07-Jan-14	761 LF	905	5,140	7.4 J
	04-Feb-14	804 LF	816	5,190	7.6 J
	04-Mar-14	752 LF	816	5,050	7.5 J
	08-Apr-14	772 LF	662	5,210	7.4 J
	06-May-14	742 LF	601	4,820	7.3 J
	03-Jun-14	737 LF	725	4,750	7.4 J
	01-Jul-14	736 LF	720	4,970	7.3 J
	05-Aug-14	695 LF	704	4,830	7.4 J
	02-Sep-14	729 LF	703	5,150	7.4 J
	07-Oct-14	733 LF	720	5,000	7.4 J
	04-Nov-14	706 LF	711	4,980	7.5 J
	02-Dec-14	757 LF	733	4,810	7.6 J
	06-Jan-15	790 LF	790	4,800	7.5 J
	03-Feb-15	760 FF	790	4,800	7.5 J
	17-Mar-15	690 LF	740	4,900	7.7 J
PE-1	07-Jan-14	5.6 LF	5.5	2,680	7.4 J
	04-Feb-14	6.0 LF	5.6	2,630	7.6 J
	04-Mar-14	4.8 LF	4.8	2,510	7.5 J
	08-Apr-14	4.2 LF	4.0	2,700	7.5 J
	06-May-14	4.3 LF	3.9	2,680	7.4 J
	03-Jun-14	4.1 LF	3.7	2,610	7.5 J
	01-Jul-14	3.7 LF	3.6	2,500	7.6 J
	05-Aug-14	3.9 LF	3.7	2,560	7.6 J
	02-Sep-14	4.0 LF	3.8	2,610	7.5 J
	07-Oct-14	4.2 LF	3.7	2,580	7.6 J
	04-Nov-14	4.7 LF	4.0	2,500	7.6 J
	02-Dec-14	4.9 LF	4.2	2,560	7.6 J
	06-Jan-15	4.2 LF	5.1	2,400	7.6 J
	03-Feb-15	3.8 FF	4.7 FF	2,500	7.7 J
	17-Mar-15	3.4 LF	4.0	2,500	7.7 J

Notes:

J = concentration or reporting limit estimated by laboratory or data validation.
FF = field filtered.
LF = lab filtered.
mg/L = milligrams per liter.
µg/L = micrograms per liter.

Groundwater samples from active extraction wells are taken at sample taps in Valve Vault 1 on the MW-20 bench.

Dissolved chromium was analyzed by Method SW6020A or USEPA200.8 or USEPA200.7, hexavalent chromium analyzed by Method SM3500-CrB or USEPA218.6, and total dissolved solids were analyzed by Method SM2540C.

TABLE 4-3
Average Hydraulic Gradients Measured at Well Pairs, First Quarter 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well Pair[a]	**Reporting Period**	**Mean Landward**[b] **Hydraulic Gradient (feet/foot)**	**Days in**[c] **Monthly Average**
Overall Average	January	0.0053	NA
	February	0.0055	NA
	March	0.0059	NA
Northern Gradient Pair MW-31-135 / MW-33-150	January	0.0023	31 / 31
	February	0.0024	28 / 28
	March	0.0027	31 / 31
Central Gradient Pair MW-45-95 / MW-34-100	January	0.0098	31 / 31
	February	0.0101	28 / 28
	March	0.0107	31 / 31
Southern Gradient Pair MW-45-95 / MW-27-85	January	0.0039	31 / 31
	February	0.0040	28 / 28
	March	0.0043	31 / 31

Notes:

NA = All available data used in calculating overall average except where noted.

a Refer to Figure 1-4 for location of well pairs.
b For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot.
c Number of days transducers in both wells were operating correctly / total number of days in month.

Table 4-4
Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3
First Quarter 2015 Interim Measures Performance Monitoring and
Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

	Davis Dam Release			Colorado River Elevation at I-3		
Month	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft amsl)	Actual (ft amsl)	Difference (feet)
January 2013	8,300	8,299	1	453.2	453.28	0.04
February 2013	10,600	10,972	-372	454.3	454.63	0.4
March 2013	15,200	15,545	-345	456.0	456.29	0.3
April 2013	17,600	17,090	510	456.9	456.74	-0.1
May 2013	15,800	15,592	208	456.4	456.44	0.0
June 2013	15,700	15,588	112	456.5	456.47	0.0
July 2013	14,400	13,165	1,235	456.0	455.79	-0.2
August 2013	13,100	12,185	915	455.4	455.43	0.0
September 2013	11,700	11,446	254	454.8	455.02	0.2
October 2013	12,300	12,497	-197	454.9	455.09	0.2
November 2013	9,700	8,918	782	454.0	453.98	0.0
December 2013	6,400	7,636	-1,236	452.4	452.81	0.4
January 2014	8,300	8,970	-670	452.8	453.27	0.5
February 2014	11,600	11,850	-250	454.3	454.67	0.3
March 2014	16,600	17,473	-873	456.4	456.70	0.3
April 2014	18,200	17,718	482	457.1	457.08	0.0
May 2014	16,700	16,622	78	456.8	456.68	-0.1
June 2014	15,900	15,917	-17	456.6	456.64	0.1
July 2014	15,100	14,640	460	456.3	456.24	0.0
August 2014	12,300	11,336	964	455.2	455.26	0.1
September 2014	13,100	12,211	889	455.3	455.30	0.0
October 2014	10,700	10,434	266	454.3	454.81	0.5
November 2014	10,700	10,575	125	454.3	454.22	-0.1
December 2014	6,400	7,235	-835	452.4	452.93	0.5
January 2015	10,600	10,740	-140	454.3	454.39	0.1
Febraury 2015	10,500	11,252	-752	454.2	454.52	0.3
March 2015	14,900	15,658	-758	455.9	456.29	0.4
April 2015	18,000			457.1		

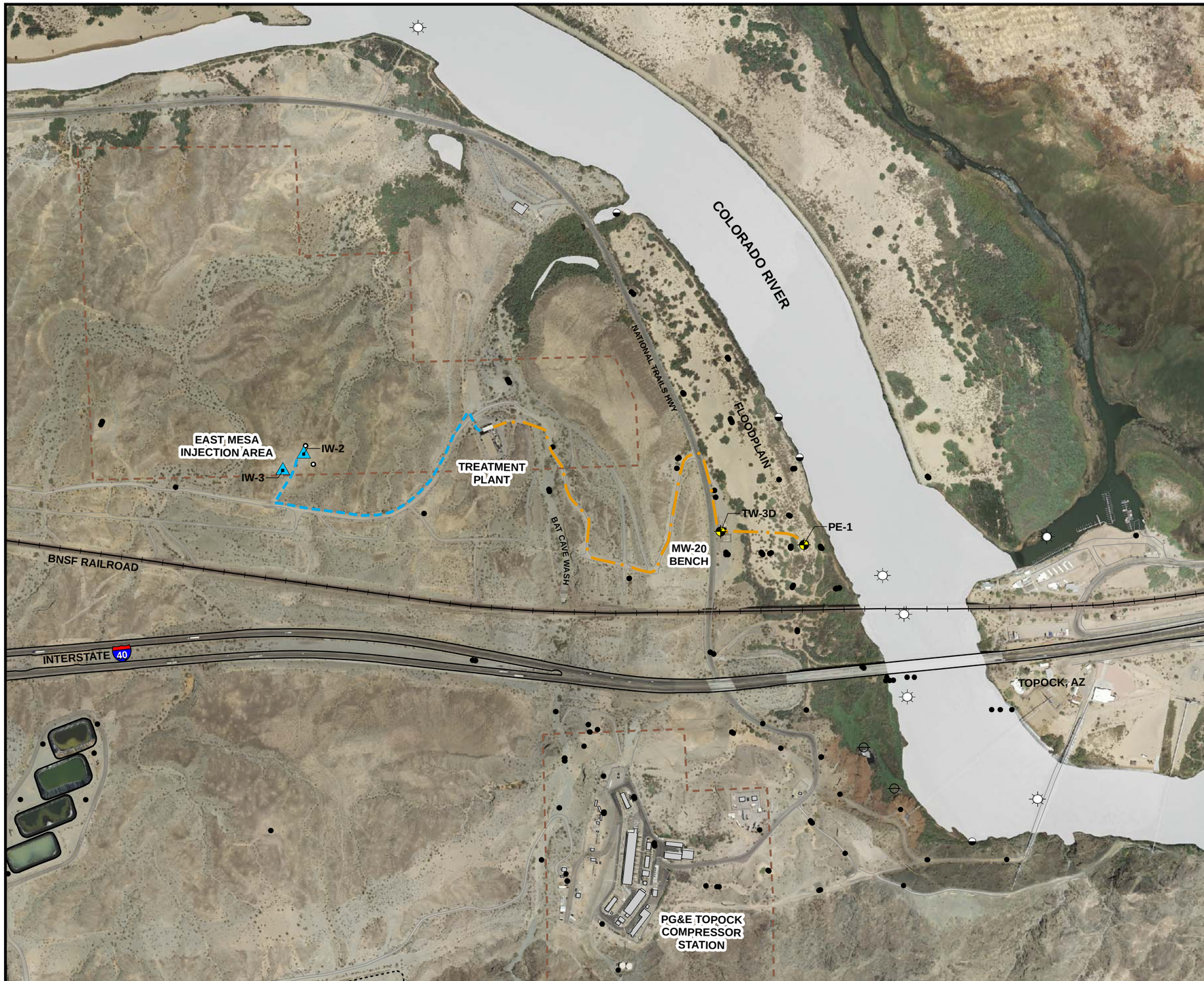
NOTES:
cfs = cubic feet per second; ft amsl = feet above mean sea level.
NA = Data unavailable during this time period.

Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon April 2015 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf.

The difference in I-3 elevation is the difference between the I-3 elevation predicted and the actual elevation measured at I-3. The source of this difference is differences between BOR projections and actual dam releases/Havasu reservoir levels, rather than the multiple regression error.

For data prior to 2013 please see: *Fourth Quarter 2013 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station,* Needles, California (CH2MHILL, 2014a)

Figures



VICINITY MAP

LEGEND

- IM-3 Extraction Well (Active)
- IM-3 Injection Well
- Monitoring Well in Site-Wide Groundwater Monitoring Program (GMP)
- Monitoring Well in IM-3 Compliance Monitoring Program
- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location
- Groundwater Extraction/Influent Pipeline
- Treatment Plant Effluent Pipeline
- Property Line

Notes:

1. Location map shows Interim Measure No. 3 (IM-3) active facilities as of current report.
2. See Figures 1-2 and 1-3 for complete monitoring locations and identifications.

N

0 600 1,200 Feet

FIGURE 1-1
LOCATIONS OF IM-3 FACILITIES AND MONITORING LOCATIONS

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

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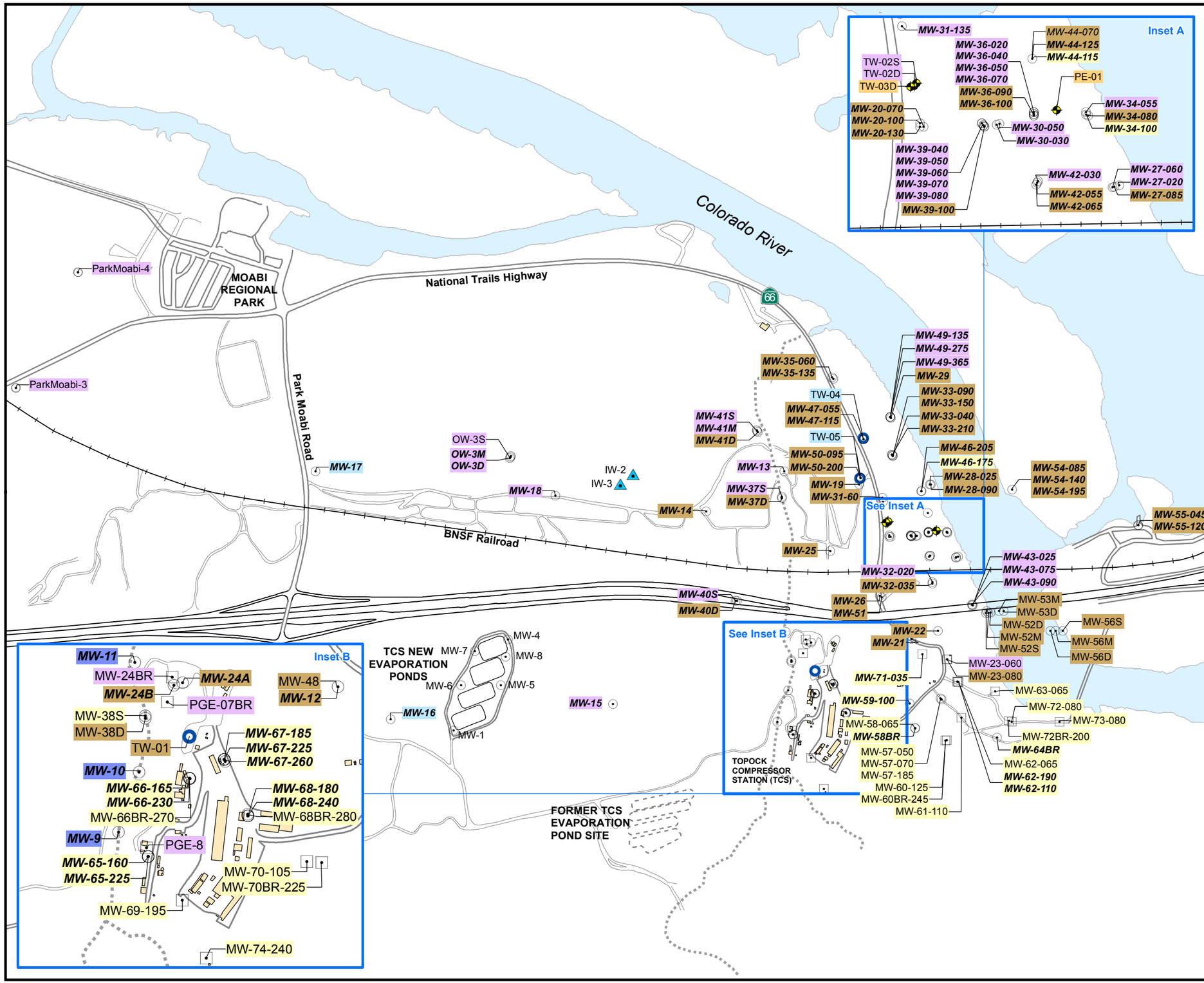

LEGEND

- Groundwater Monitoring Well Completed in Bedrock
- Injection Well (Active)
- Groundwater Monitoring Well
- Test Well or Supply Well (inactive)
- Extraction Well (Active)

Sampling Frequency for Groundwater Monitoring Program (GMP)

- MW-17 Biennial sampling
- MW-13 Annual sampling
- MW-09 Annual; plus the next quarterly event following any channel-wide flows in Bat Cave Wash with discharge through the highway culverts
- MW-21 Semiannual sampling
- TW-01 Quarterly sampling
- TW-3D Monthly sampling

Notes:
Bold/Italicized labels indicate sample collected using micropurge sampling method; otherwise, sample collected using the method indicated on Table 3-1.

N

0 500 1,000 Feet

California State Plane NAD83 Zone 5 US Feet

FIGURE 1-2
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR GMP
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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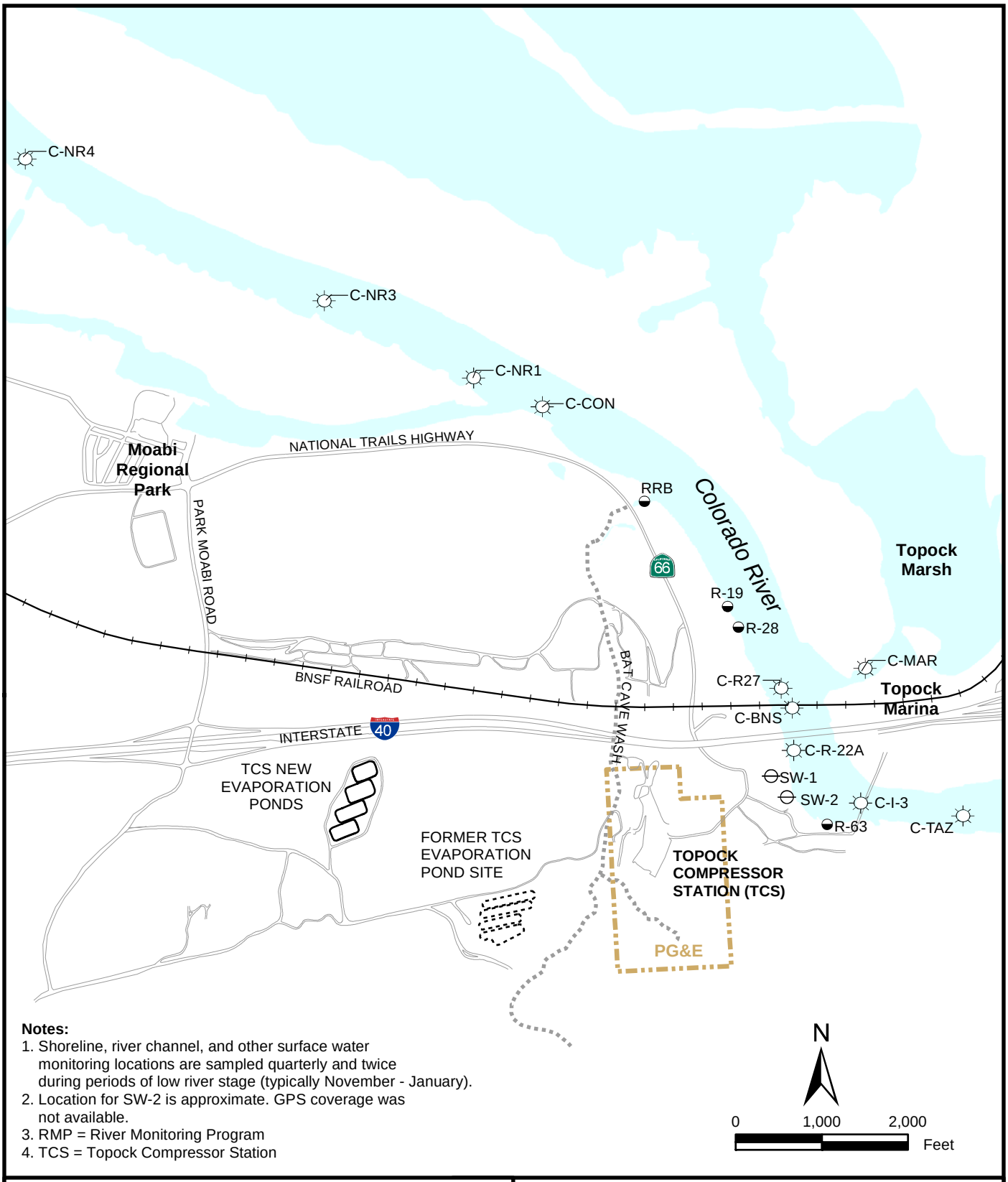

Notes:

1. Shoreline, river channel, and other surface water monitoring locations are sampled quarterly and twice during periods of low river stage (typically November - January).
2. Location for SW-2 is approximate. GPS coverage was not available.
3. RMP = River Monitoring Program
4. TCS = Topock Compressor Station

LEGEND

- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location

FIGURE 1-3
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR RMP

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q1\FIGURE1-3_GMP_RIVER_SWLOCS_2015Q1.MXD MSCHROCK 4/1/2015 10:27:45 PM

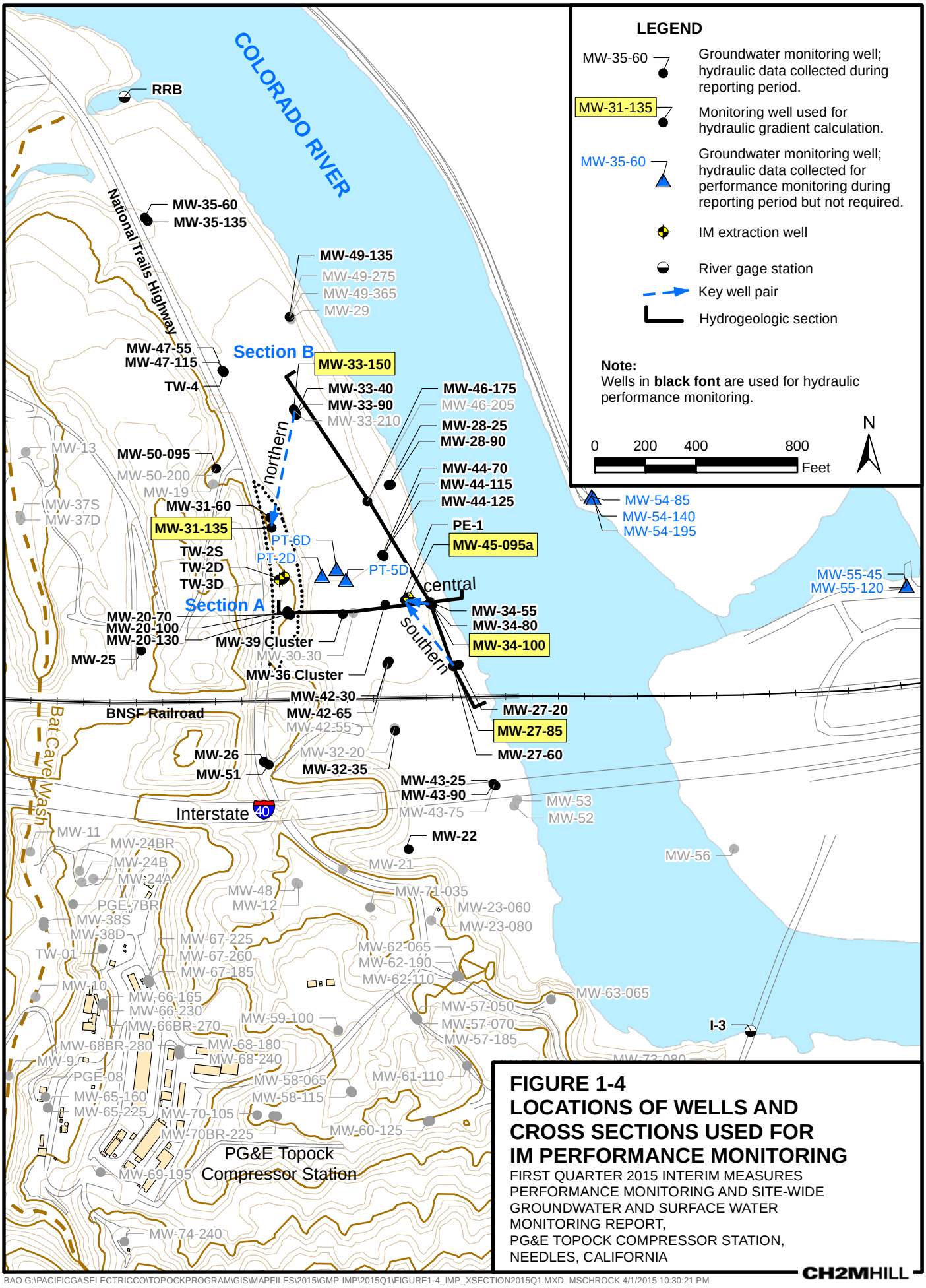

FIGURE 1-4
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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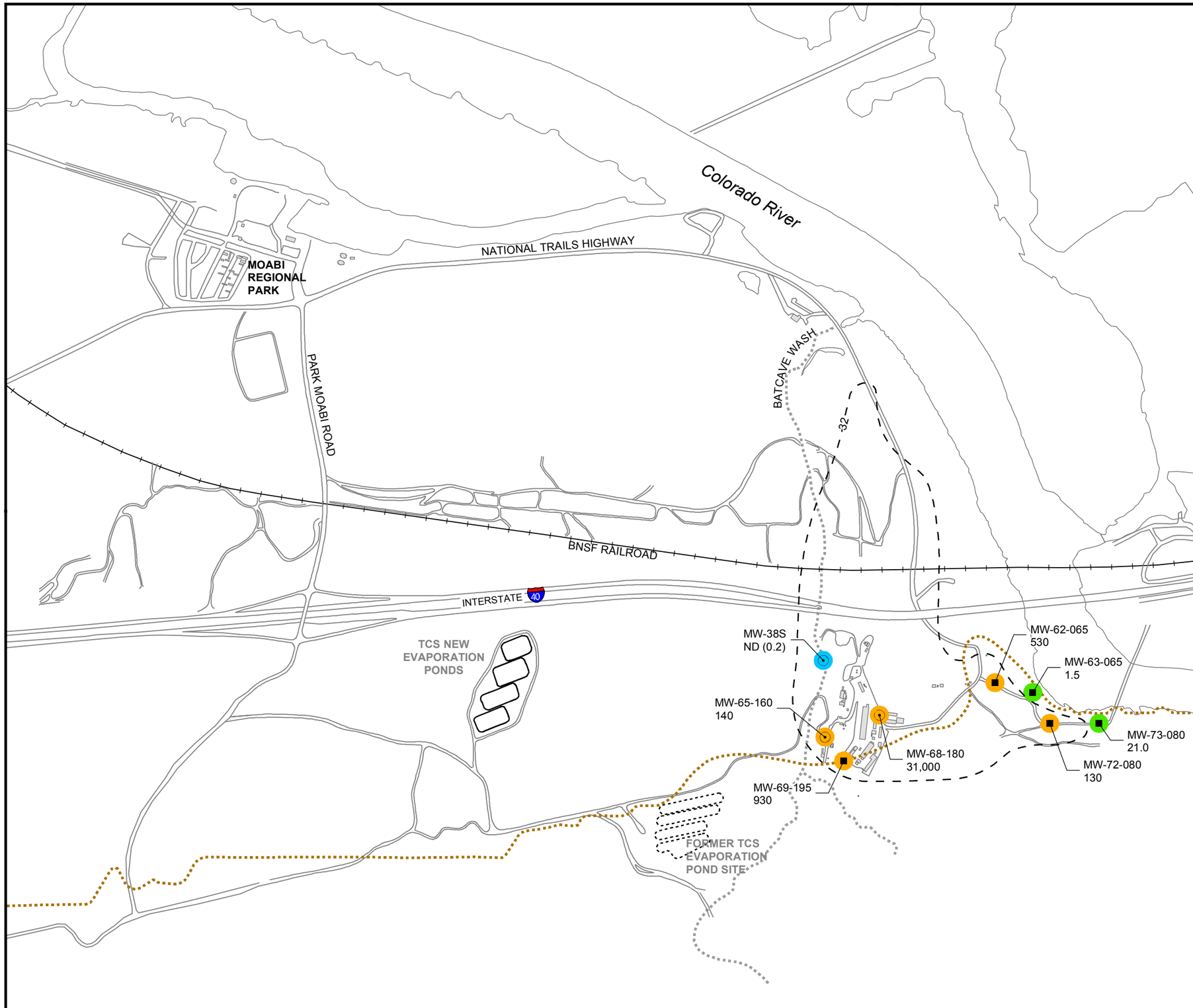
BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q1\FIGURE1-4_IMP_XSECTION2015Q1.MXD MSCHROCK 4/1/2015 10:30:21 PM



LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Shallow zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations – First Quarter 2015

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

32 Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Fourth Quarter 2014 groundwater sampling results, where a larger number of wells were sampled, and First Quarter 2015 groundwater sampling results.

Approximate bedrock contact at 455 feet above mean sea level.

Notes:
1. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
2. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000 Feet

FIGURE 3-1a
Cr(VI) SAMPLING RESULTS, SHALLOW WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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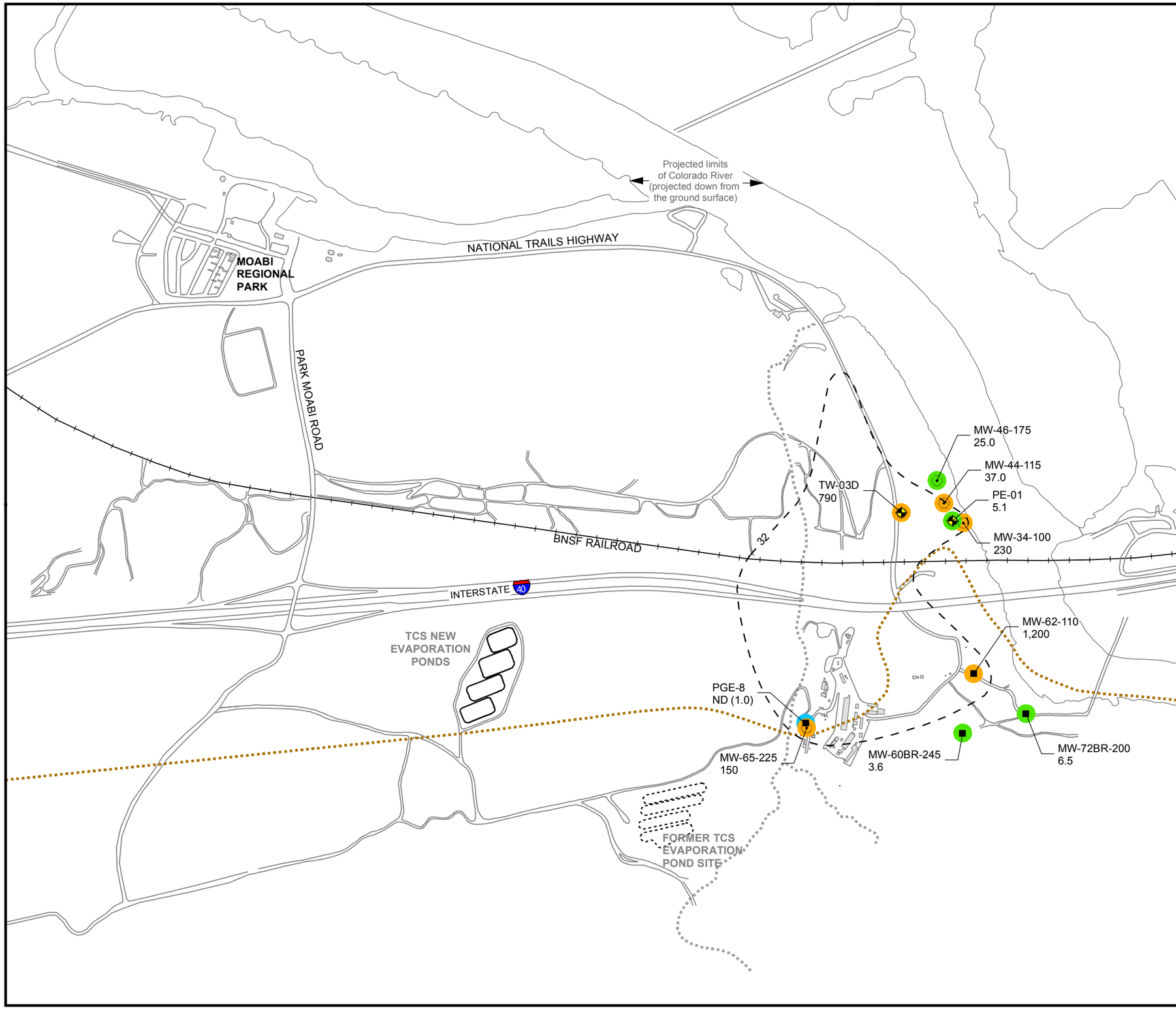

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event
- Extraction well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)
Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Deep zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

Cr(VI) Concentrations – First Quarter 2015

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L
- 32 — Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Fourth Quarter 2014 groundwater sampling results, where a larger number of wells were sampled, and First Quarter 2015 groundwater sampling results.
- Approximate bedrock contact at 395 feet above mean sea level.

Notes:

1. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
2. In the floodplain area, the 32µg/L line for Cr(VI) in deep zone (80-90 feet below Colorado River) is estimated based on available groundwater sampling, hydrogeologic and geochemical data. There are no data confirming the existence of Cr(VI) under the Colorado River.
3. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.
4. TCS - Topock Compressor Station

N

0 500 1,000 Feet

FIGURE 3-1b
Cr(VI) SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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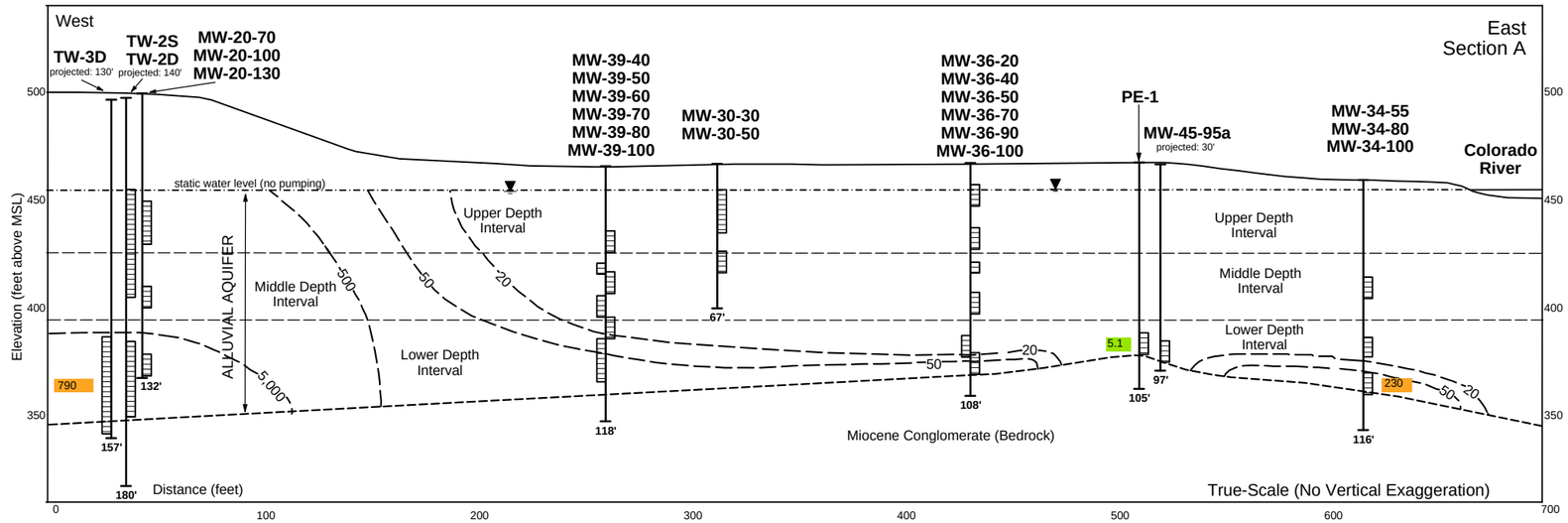
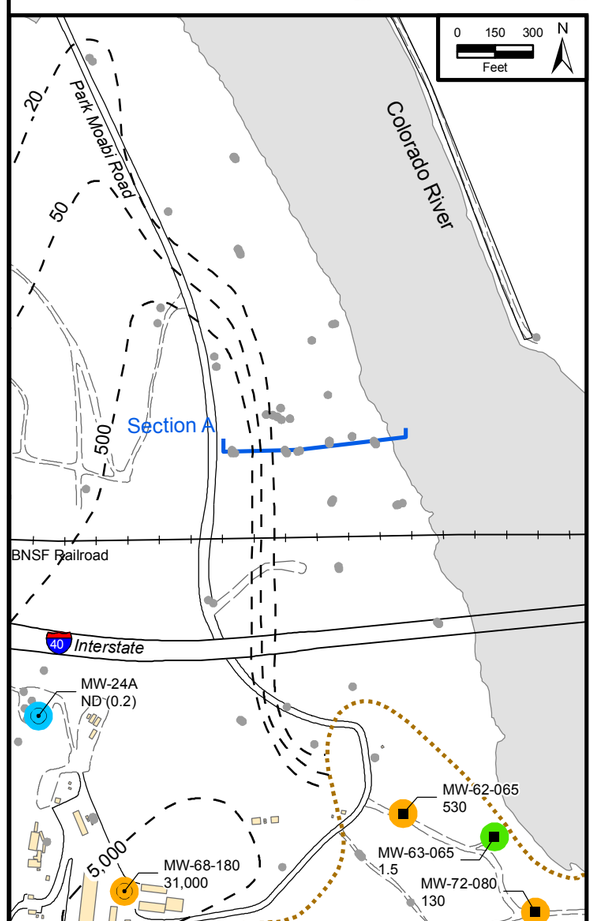
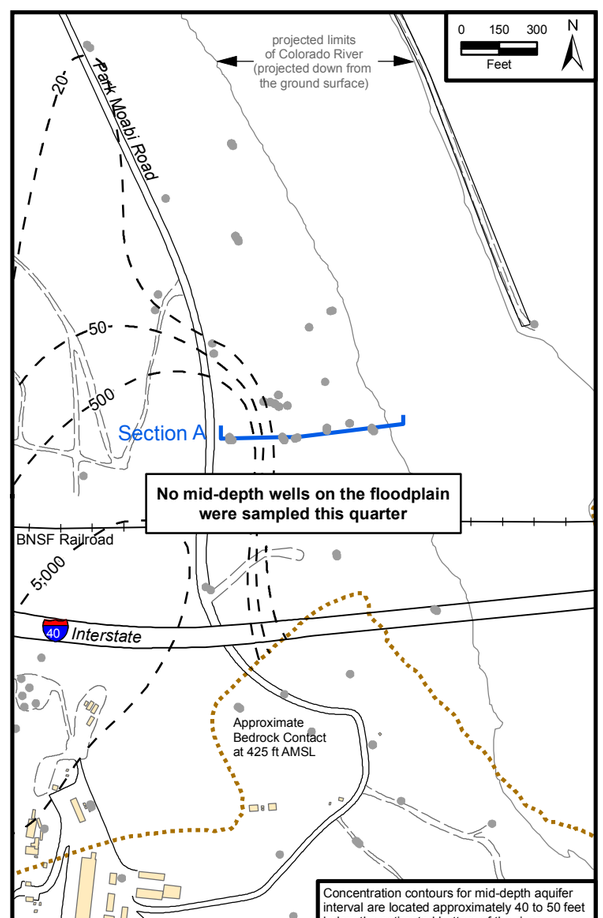
BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q1\FIGURE3-1B_IMP_CR6_2015Q1_DEEP.MXD MSCHROCK 4/17/2015 3:26:12 AM

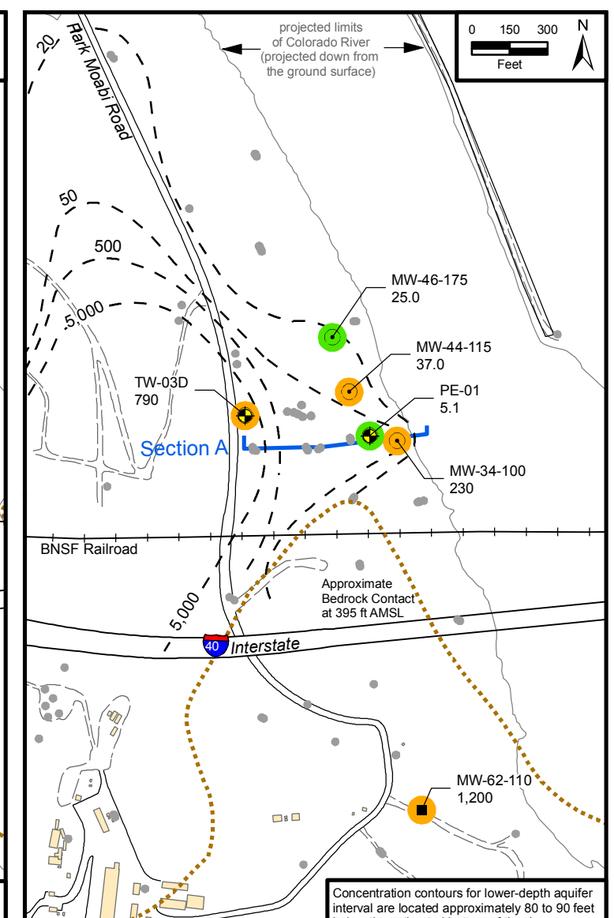




Shallow Wells (Upper-Depth Interval)



Mid-Depth Wells (Middle-Depth Interval)



Deep Wells (Lower-Depth Interval)

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event
- Extraction well sampled during sampling event
- Well not sampled during sampling event
- 6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L). Results posted are maximum Cr(VI) concentrations.
- ND (0.2) Cr(VI) not detected at listed reporting limit
- J = concentration or reporting limit (RL) estimated by laboratory or data validation.

Cr(VI) Concentrations – First Quarter 2015

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L
- 50 — Inferred Cr(VI) concentration contour within the Alluvial Aquifer depth interval based on Fourth Quarter 2014 groundwater sampling results, where a larger number of wells were sampled, and First Quarter 2015 groundwater sampling results.
- Hydrogeologic Section A
- Approximate bedrock contact

Notes:

1. The Cr(VI) concentration contours of 20 and 50 µg/L are shown in accordance with DTSC's 2005 IM performance monitoring directive. The IM performance standard was established for containment of Cr(VI) concentrations greater than 20 µg/L in the floodplain portion of the Alluvial Aquifer.
2. Active Extraction wells PE-01 and TW-3D were not included in contour development.
3. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

FIGURE 4-1
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER AND BEDROCK, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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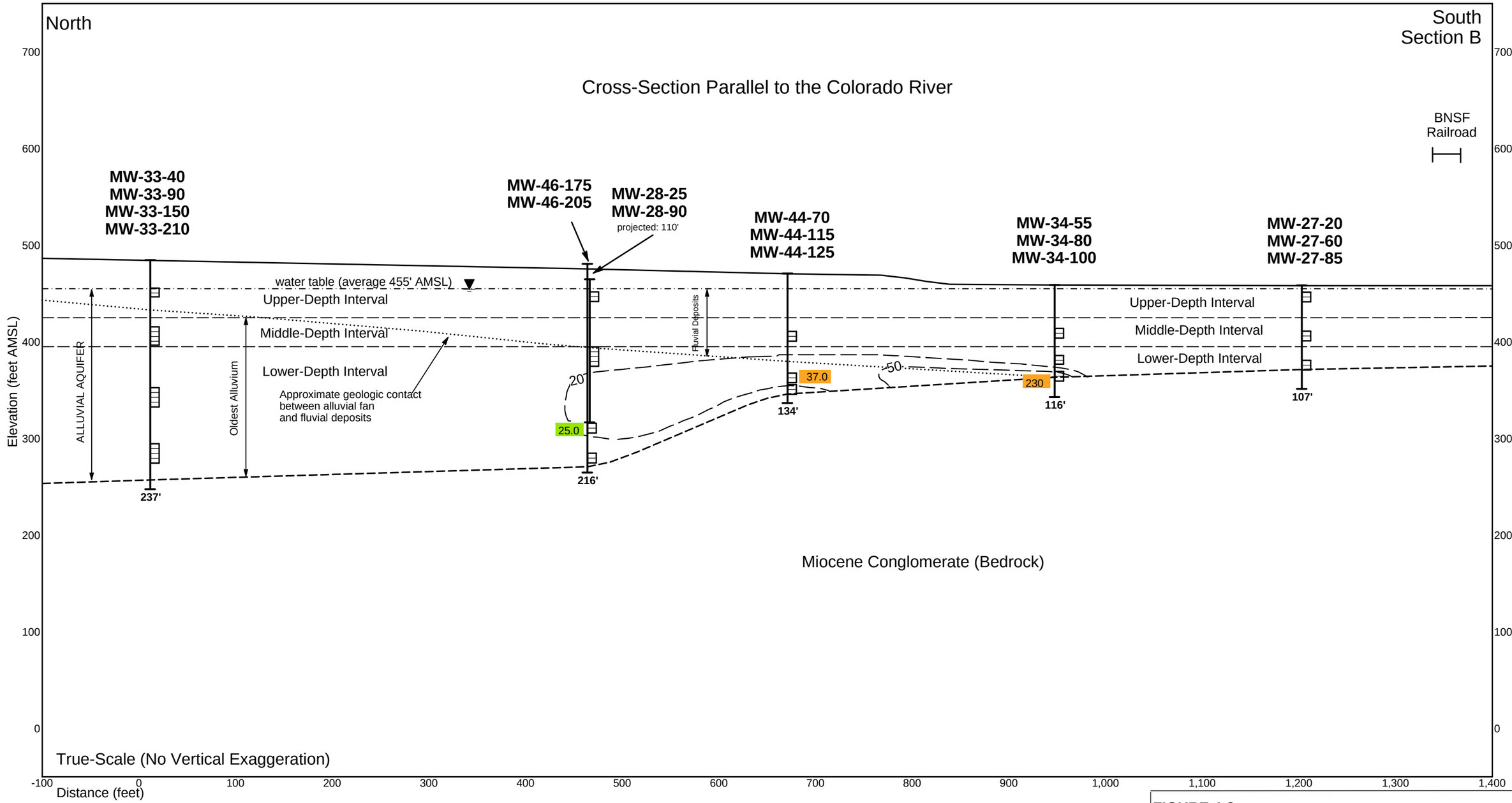


Notes:

AMSL = above mean sea level.
ND = not detected at listed reporting limit.
µg/L = micrograms per liter.

1. See Table 3-1 for additional sampling data and prior results for wells on this figure.

2. See Figure 1-4 for location of this cross-section.

water level

well screen — 3,810

boring depth (feet) — 103'

-— —- 50 -— —-

Inferred hexavalent chromium contours (µg/L) in Alluvial Aquifer from Fourth Quarter 2014, where a larger number of wells were sampled, and First Quarter 2015.

Hexavalent Chromium [Cr(VI)] concentration in micrograms per liter (µg/L), equivalent to parts per billion (ppb).

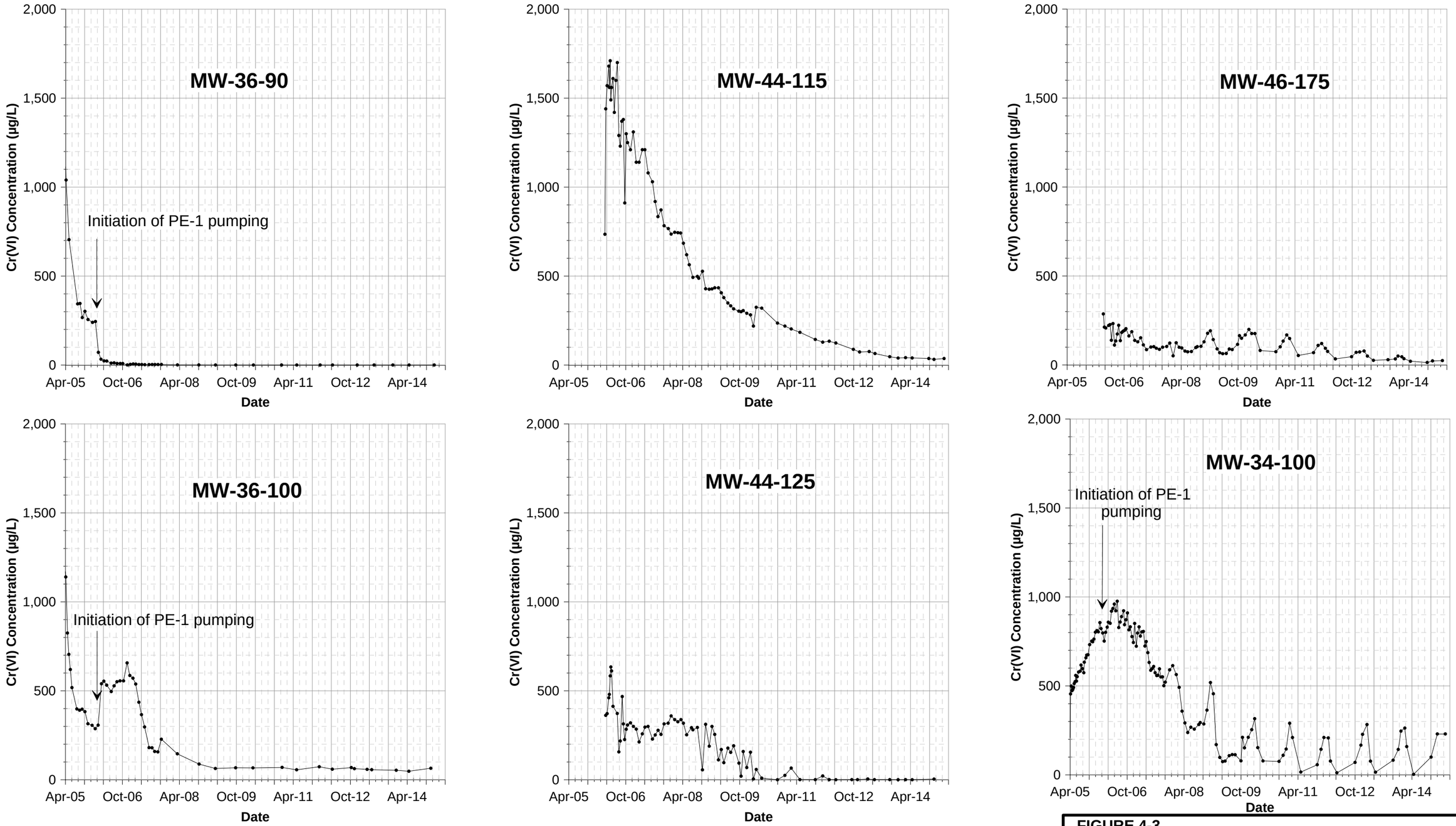
ND (0.2)	Not detected at listed reporting limit
24.2	Concentration between reporting limit and 32 µg/L
203	Concentration greater than or equal to 32 µg/L

FIGURE 4-2
Cr(VI) CONCENTRATIONS, FLOODPLAIN CROSS-SECTION B, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

C:\USERS\AURORA\DOCUMENTS\TOPOCK\GINT\2015_1Q\FIGURE4-2_XSECB_CR_2014.GDW;



Notes:

1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table 3-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume west of PE-1. MW-44 wells, MW-46-175, and MW-34-100 selected to monitor concentrations within the plume.

FIGURE 4-3
Cr(VI) CONCENTRATION TRENDS IN SELECTED PERFORMANCE MONITORING WELLS, APRIL 2005 THROUGH MARCH 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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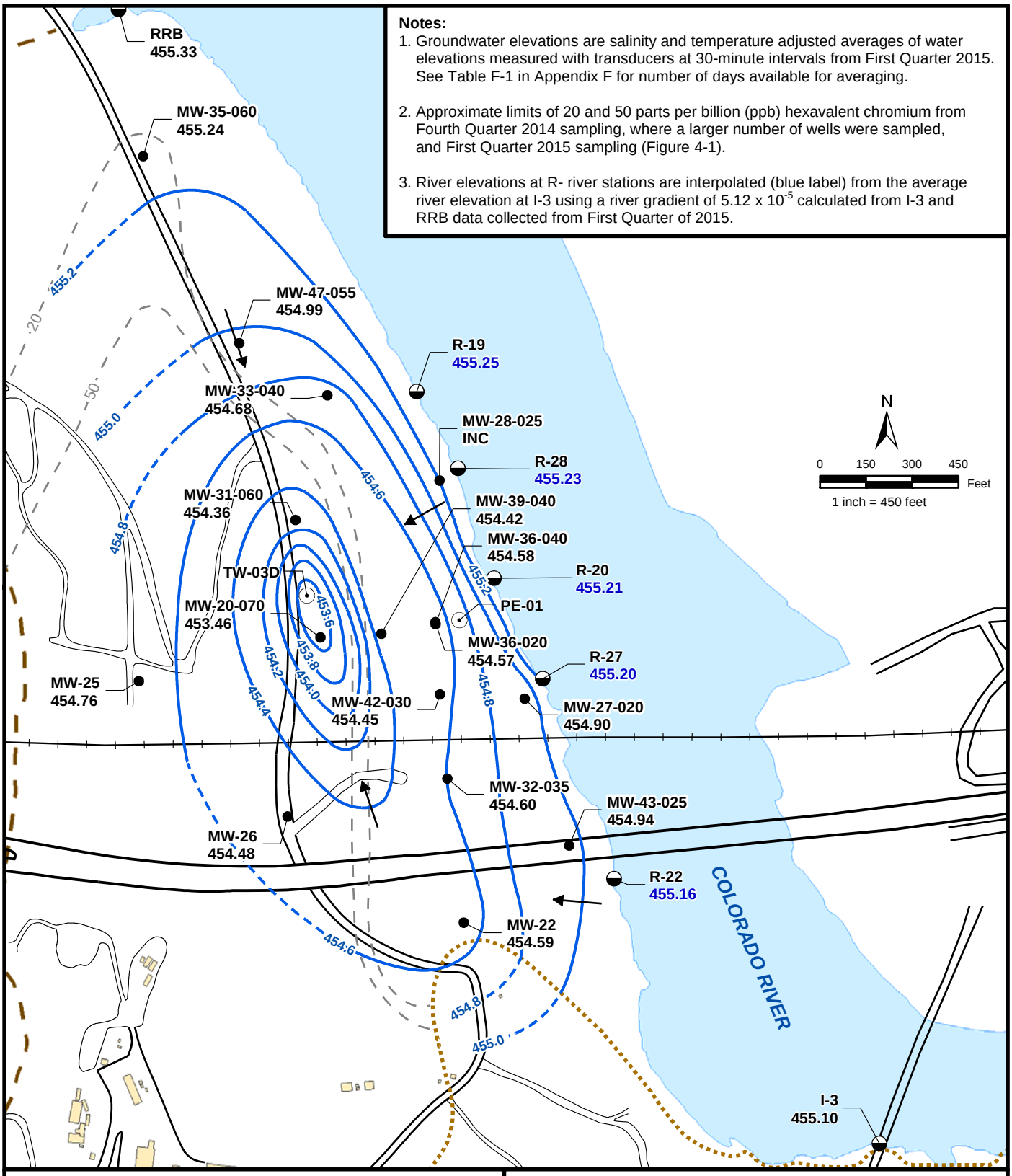

Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from First Quarter 2015. See Table F-1 in Appendix F for number of days available for averaging.

2. Approximate limits of 20 and 50 parts per billion (ppb) hexavalent chromium from Fourth Quarter 2014 sampling, where a larger number of wells were sampled, and First Quarter 2015 sampling (Figure 4-1).

3. River elevations at R- river stations are interpolated (blue label) from the average river elevation at I-3 using a river gradient of 5.12 x 10^{-5} calculated from I-3 and RRB data collected from First Quarter of 2015.

MW-29 455.85	Average Groundwater Elevation at Monitoring Station (ft AMSL)
R-22 454.84	River Elevation (ft MSL) Interpolated Average
INC	Data Incomplete for Reporting Period
	Bedrock Contact at 455 ft elevation
	Monitoring Well
	River Station
	Extraction Well
	Interpreted Groundwater Flow Direction
	Groundwater Elevation Contour 0.2 ft (dashed where inferred)

FIGURE 4-4a
AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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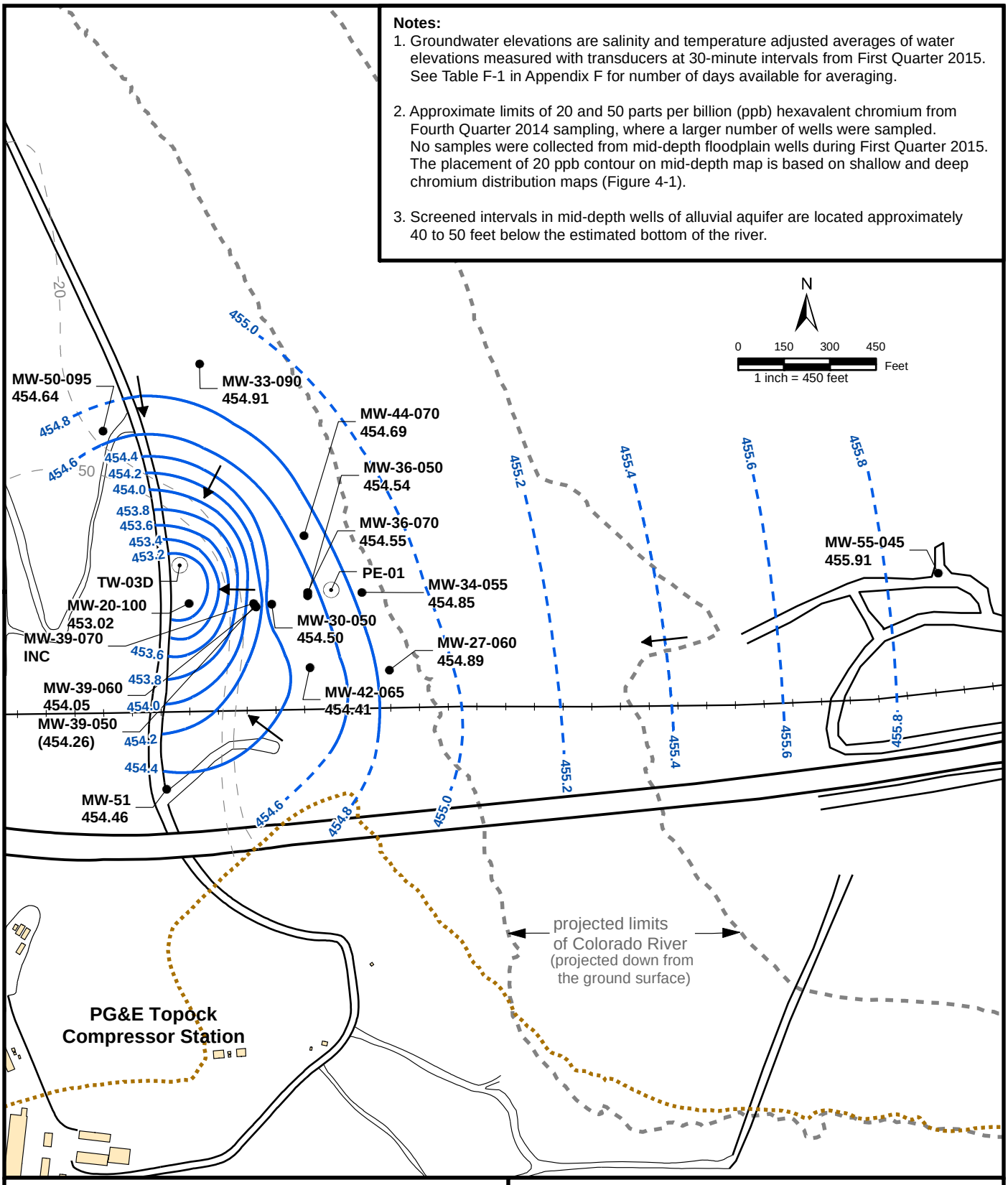
BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q1\FIGURE4-4A_PMR_GWE_2015Q1_SHALLOW.MXD MSCHROCK 4/8/2015 12:20:33 PM

Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from First Quarter 2015. See Table F-1 in Appendix F for number of days available for averaging.

2. Approximate limits of 20 and 50 parts per billion (ppb) hexavalent chromium from Fourth Quarter 2014 sampling, where a larger number of wells were sampled. No samples were collected from mid-depth floodplain wells during First Quarter 2015. The placement of 20 ppb contour on mid-depth map is based on shallow and deep chromium distribution maps (Figure 4-1).

3. Screened intervals in mid-depth wells of alluvial aquifer are located approximately 40 to 50 feet below the estimated bottom of the river.



MW-29 455.85	Average Groundwater Elevation at Monitoring Station (ft AMSL)
MW-29 (455.85)	Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring
INC	Data Incomplete for Reporting Period
	Bedrock Contact at 425 ft AMSL elevation
	Monitoring Well
	Extraction Well
	Groundwater Elevation Contour 0.2 ft (dashed where inferred)
	Interpreted Groundwater Flow Direction

FIGURE 4-4b
AVERAGE GROUNDWATER ELEVATIONS IN MID-DEPTH WELLS, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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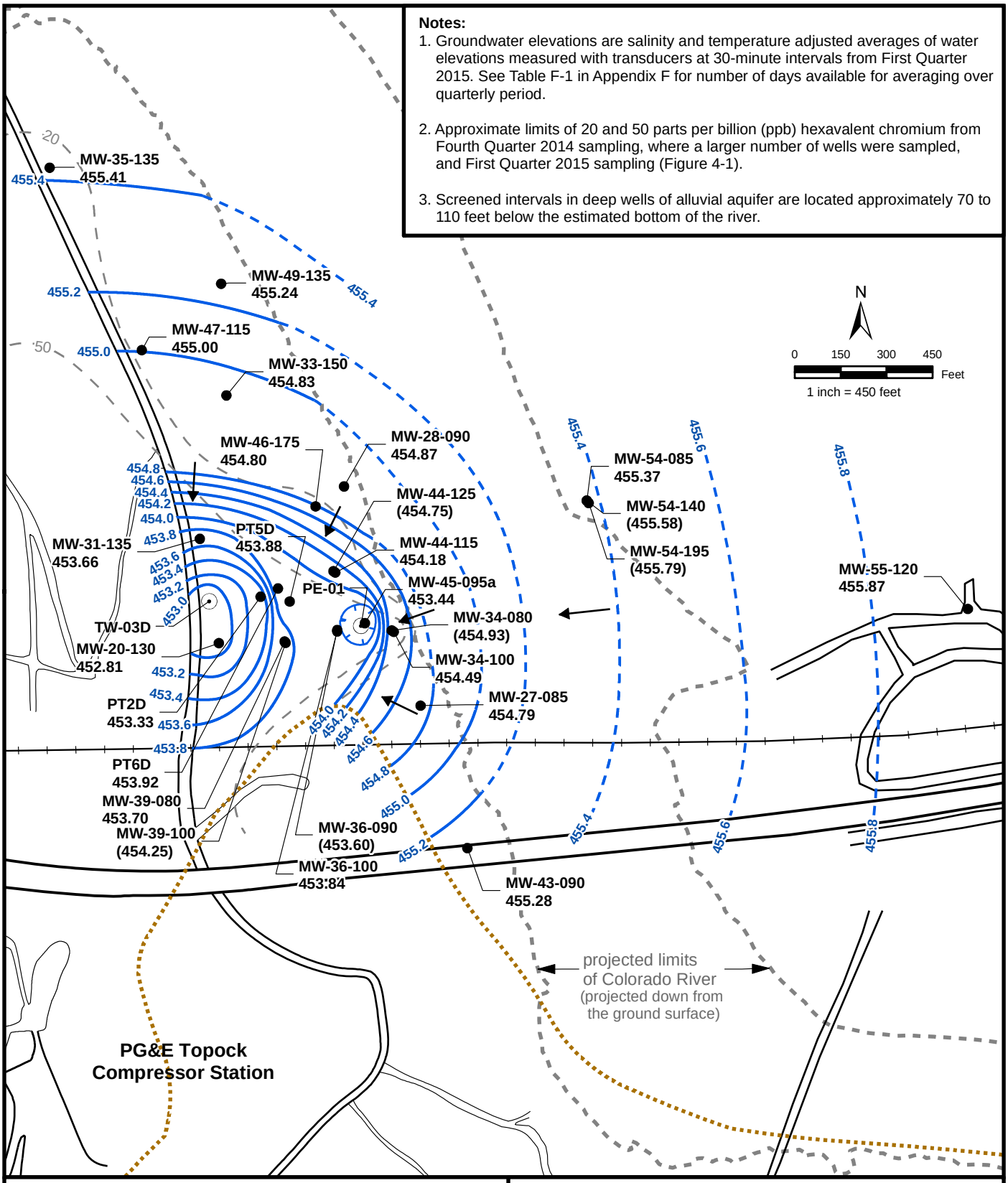
BAO G:\PACIFICGASELECTRICCO\TOPOCK\PROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q1\FIGURE4-4B_PMR_GWE_2015Q1_MID.MXD MSCHROCK 4/8/2015 12:10:08 PM

Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from First Quarter 2015. See Table F-1 in Appendix F for number of days available for averaging over quarterly period.

2. Approximate limits of 20 and 50 parts per billion (ppb) hexavalent chromium from Fourth Quarter 2014 sampling, where a larger number of wells were sampled, and First Quarter 2015 sampling (Figure 4-1).

3. Screened intervals in deep wells of alluvial aquifer are located approximately 70 to 110 feet below the estimated bottom of the river.



MW-29 455.85 — Average Groundwater Elevation at Monitoring Station (ft AMSL)

MW-29 (455.85) — Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring

Bedrock Contact at 395 ft AMSL elevation

Monitoring Well

Extraction Well

Groundwater Elevation Contour 0.2 ft (dashed where inferred)

Interpreted Groundwater Flow Direction

FIGURE 4-4c
AVERAGE GROUNDWATER ELEVATIONS IN DEEP WELLS, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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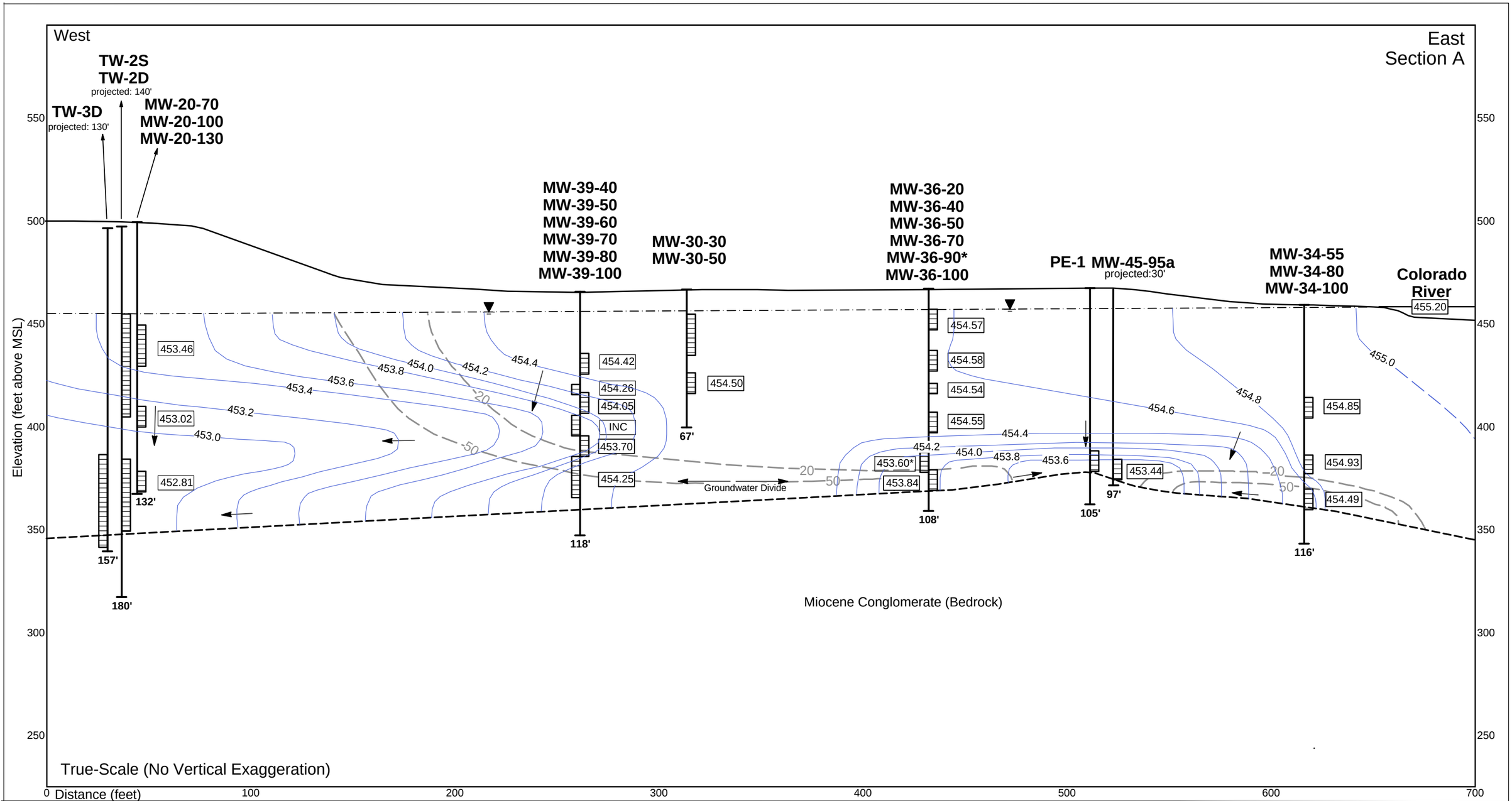
BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q1\FIGURE4-4C_PMR_GWE_2015Q1_DEEP.MXD MSCHROCK 4/17/2015 1:53:53 AM



Notes:
Results show average groundwater elevations for January 1, 2015 through March 31, 2015 measured with transducers at 30 minute intervals.

Groundwater elevations adjusted for salinity and temperature.
Well MW-36-90* is excluded from contouring.
River elevation (R-27) is the calculated average river level based upon the river gradient between RRB and I-3.

Legend:

MW-30-50 — Inferred water table; well screen; 455.23; 103 boring depth (feet)

20 — Inferred hexavalent chromium contour (ppb) in Alluvial Aquifer from Fourth Quarter 2014, where a larger number of wells were sampled, and First Quarter 2015. Average groundwater head (ft AMSL)

453.5 — Groundwater head contour

453.5 — Inferred groundwater head contour

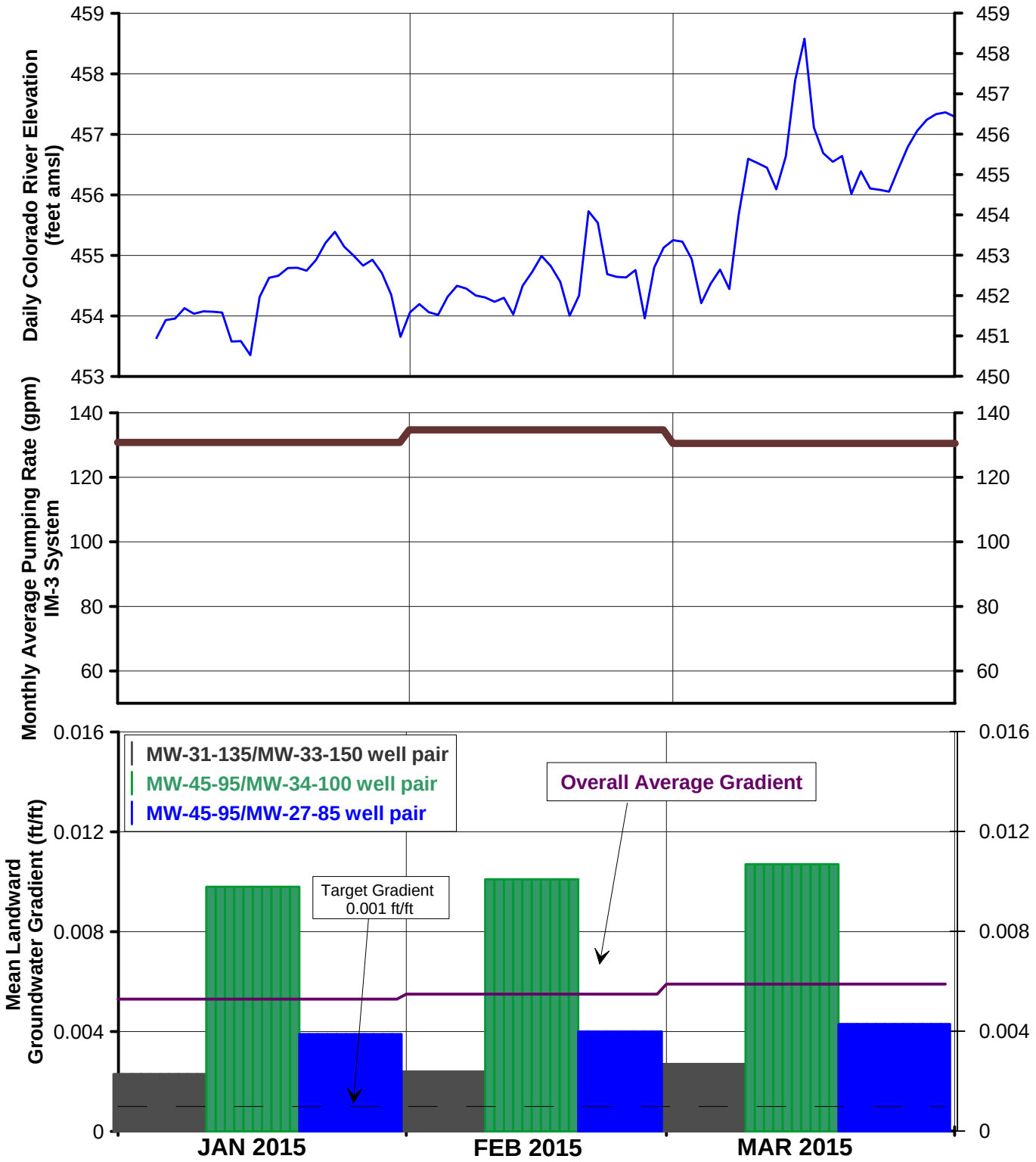
Interpreted groundwater flow direction

FIGURE 4-5
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS-SECTION A, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

C:\USERS\AURORA\DOCUMENTS\TOPOCK\GINT\2015_1Q\FIGURE4-5_XSECA_GW.GDW;



Notes:

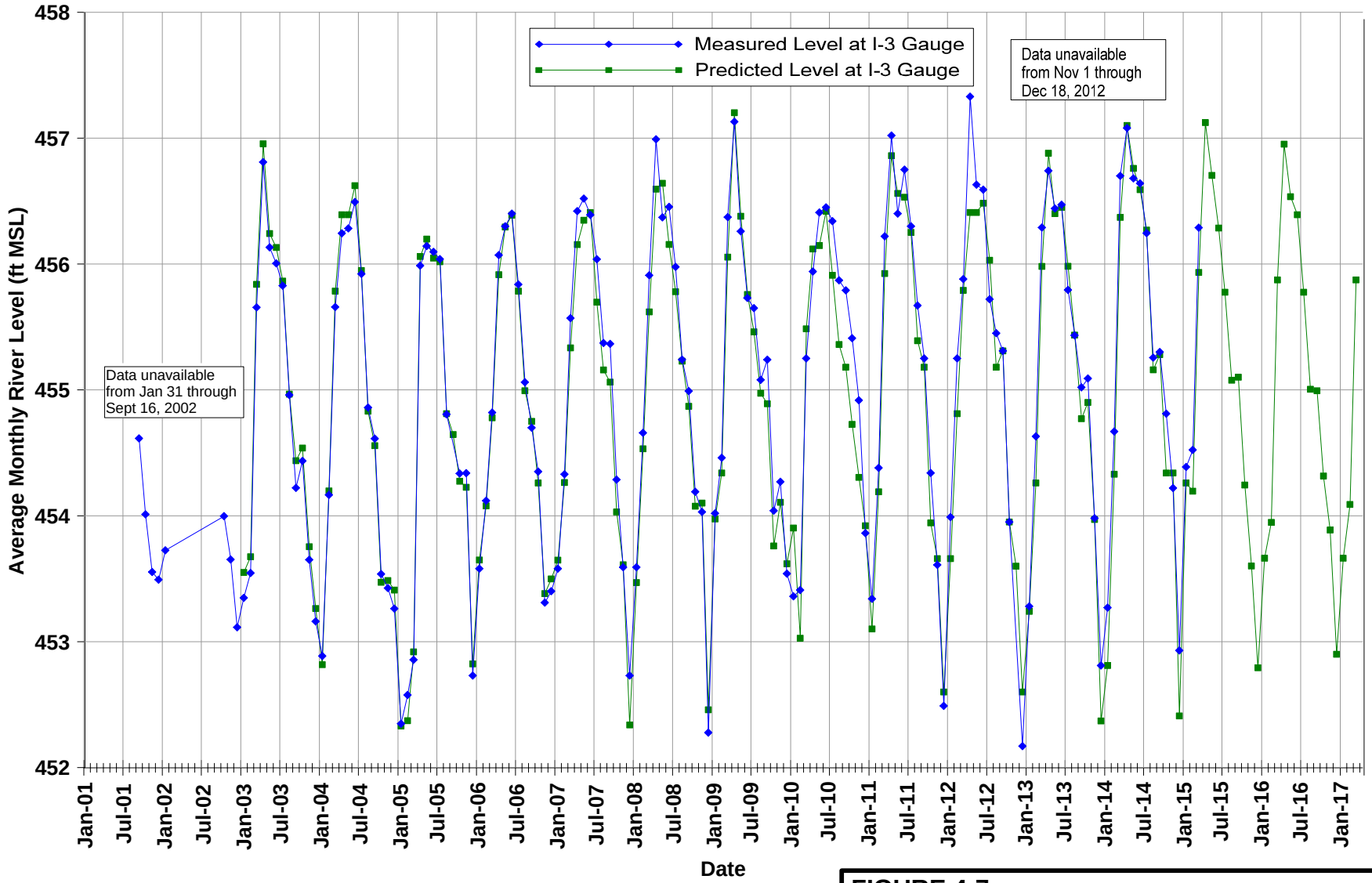
1. For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2. Refer to Table 4-1 and Section 4.4 for discussion of pumping data.
3. Pumping rate plotted is the combined rate of extraction wells TW-3D and PE-1 in operation each month.
4. Refer to Table 4-3 and Section 4.5 for discussion of gradient data.

amsl = above mean sea level.
ft/ft = feet/foot.
gpm = gallons per minute.

FIGURE 4-6
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATIONS, AND PUMPING RATE, FIRST QUARTER 2015

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



Note:
Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon April 2015 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf

FIGURE 4-7
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION

FIRST QUARTER 2015 INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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Appendix A
Well Inspection and Maintenance Log, First Quarter 2015

Table A-1
Well Inspection Log, First Quarter 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well/ Piezometer	Inspection Date	Survey Mark Present? (Y/N)	Standing or Ponded Water? (Y/N)	Lock in Place? (Y/N)	Evidence of Well Subsidence? (Y/N)	Well Labeled on Casing or Pad? (Y/N)	Traffic Poles Intact? (Y/N)	Concrete Pad Intact? (Y/N)	Erosion Around Wellhead? (Y/N)	Steel Casing Intact? (Y/N)	PVC Cap Present? (Y/N)	Standing Water in Annulus? (Y/N)	Well Casing Intact? (Y/N)	Photo taken this quarter? (Y/N)	Notes	Required Actions	Action Completed? (Y/N)	Action Completed Date
CW-1D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-1M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-2D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-2M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-3D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-3M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-4D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
CW-4M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-01	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	needs paint			
MW-03	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	needs paint			
MW-04	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	needs paint			
MW-05	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-06	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-07	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-08	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-09	02/24/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-10	02/24/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-11	02/24/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-12	02/24/15	Y	N	Y	N	Y	Y	*	N *	Y	Y	N	Y	NA	Soil deposition around well. No change.			
MW-13	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	Needs paint			
MW-14	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-15	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-16	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs paint			
MW-17	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	needs lid painted			
MW-18	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-19	03/02/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-20-070	03/02/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	paint			
MW-20-100	03/02/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	paint			
MW-20-130	03/02/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	paint			
MW-21	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-22	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-23-060 MW-23-080	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-24 BR	02/24/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-24A	02/24/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-24B	02/24/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-25	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-26	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-27-020	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-27-060	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-27-085	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-28-025	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-28-090	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-29	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-30-030	03/17/15	Y	N	Y	N	Y	NA	Y	N*	Y	Y	N	Y	NA	Sand deposited over pad.			
MW-30-050	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-31-060	03/02/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-31-135	03/02/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	paint			

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MW-32-020	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-32-035	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-33-150	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-33-210	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-33-040	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-33-090	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-34-055	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-34-080	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-34-100	02/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-35-135	03/02/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-35-60	03/02/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-36-020 MW-36-070	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-36-090 MW-36-040	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-36-050 MW-36-100	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-37D	02/24/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	Only 2 bollards - no change.			
MW-37S	02/24/15	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	NA	No bollards. No change.			
MW-38S	02/24/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-38D	02/24/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-39-040 MW-39-070	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-39-050 MW-39-080	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-39-060 MW-39-100	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-40D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-40S	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-41D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	Slight erosion under pad, 1"; no change.			
MW-41M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	as above			
MW-41S	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-42-030	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-42-055	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-42-065	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-43-025	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-43-075	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-43-090	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-44-125 MW-44-070	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-44-115	02/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-45-095a MW-45-095b	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-46-175 MW-46-205	02/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-47-055 MW-47-115	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				

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MW-48	02/24/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA	Soil deposition on pad. No change.			
MW-49-135 MW-49-275 MW-49-365	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-50-095 MW-50-200	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-51	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-52D/M/S	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-53D/M/S	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-54-085 MW-54-140	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-54-195	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-55-045 MW-55-120	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-56 D/S/M	03/03/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MW-57-050	02/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-57-070	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-57-185	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-58BR	02/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-58-065	02/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-59-100	02/24/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-60-125	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-60BR-245	02/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-61-110	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-62-110 MW-62-190	02/10/15	N	N	N	N	Y	NA	Y	N	Y	Y	N	Y	NA	Flute wells - cant lock	Static WL, not measured in flute wells		
MW-62-065	02/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-63-065	02/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-64BR	02/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-65-160 MW-65-225	02/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-66-165 MW-66-230	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	yes PVC cap			
MW-66BR-270	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-67-185	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-67-225 MW-67-260	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-68BR-280	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-68-180 MW-68-290	02/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-69-195	02/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-70BR-225	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-70-105	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-71-035	02/24/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-72-080	02/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	Soil deposition on flushmount well.			
MW-72BR-200	02/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	as above			

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MW-73-080	02/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MW-74-240	03/18/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
MWP-08	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
MWP-10	02/26/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
OW-1D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-1M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-1S	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-2D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-2M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-2S	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-3D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-3M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-3S	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
OW-5D	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	slight erosion under bottom of concrete pad - no change			
OW-5M	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	slight erosion under bottom of concrete pad - no change			
OW-5S	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	slight erosion under bottom of concrete pad - no change			
P2	02/26/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA	*see note from Q3 2013 - no change			
PG&E-8	03/18/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	NA				
PGE-7	02/24/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-1 3 WELLS	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-2 3 WELLS	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-3 3 WELLS	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-4 3 WELLS	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-5 3 WELLS	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-6 3 WELLS	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-7 S/D	02/24/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-7M	02/24/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-8 S/D	02/24/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-8M	02/24/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-9 S/D	02/24/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PT-9M	02/24/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PTI-1D	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
PTI-1M	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				

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PTI-1S	03/17/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
TW-01	02/24/15	Y	N	N	N	Y	NA	Y	N	Y	Y	N	Y	NA				
TW-04	03/03/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				
TW-05	03/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	NA				

Notes:
* There is a note with more information on this parameter.
NA = Not applicable
PVC = polyvinyl chloride

Appendix B
Lab Reports, First Quarter 2015

(Provided on CD-ROM only with hard copy submittal)

January 20, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014306

RE: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 06, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (4.201 ug/L) and hexavalent chromium (5.1391 ug/L) for sample N014306-001 (PE-01-226) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 4.19 and 4.095 ug/L, respectively. Since these data confirmed

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the original result for total dissolved chromium, the original result is reported.

Analytical Comments for EPA 300.0:

Dilution was necessary on sample N014306-002 due to precipitation of sample upon the addition of eluent.

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ASSET Laboratories

Date: *20-Jan-15*

CLIENT: CH2M HILL
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00
Lab Order: N014306
Contract No: IM3Plant-EW-2

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014306-001A	PE-01-226	Groundwater	1/6/2015 2:36:00 PM	1/6/2015	1/20/2015
N014306-001B	PE-01-226	Groundwater	1/6/2015 2:36:00 PM	1/6/2015	1/20/2015
N014306-001C	PE-01-226	Groundwater	1/6/2015 2:36:00 PM	1/6/2015	1/20/2015
N014306-001D	PE-01-226	Groundwater	1/6/2015 2:36:00 PM	1/6/2015	1/20/2015
N014306-002A	TW-03D-226	Groundwater	1/6/2015 2:36:00 PM	1/6/2015	1/20/2015
N014306-002B	TW-03D-226	Groundwater	1/6/2015 2:36:00 PM	1/6/2015	1/20/2015
N014306-002C	TW-03D-226	Groundwater	1/6/2015 2:36:00 PM	1/6/2015	1/20/2015
N014306-002D	TW-03D-226	Groundwater	1/6/2015 2:36:00 PM	1/6/2015	1/20/2015

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150107C**	QC Batch: **R97449**			PrepDate			Analyst: **RB**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	1/7/2015 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150107C**	QC Batch: **R97449**			PrepDate			Analyst: **RB**
Specific Conductance	8400	0.10	0.10		umhos/cm	1	1/7/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *20-Jan-15*

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N014305-001BDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:				RunNo:	**97449**
Client ID:	**ZZZZZZ**	Batch ID:	**R97449**	TestNo:	**EPA 120.1**			Analysis Date:	**1/7/2015**			SeqNo:	**1903549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7510.000	0.10						7530	0.266	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150107B** QC Batch: **R97447**				PrepDate			Analyst: **RB**
pH	7.6	0.10	0.10	H	pH Units	1	1/7/2015 11:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/7/2015 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150107B** QC Batch: **R97447**				PrepDate			Analyst: **RB**
pH	7.5	0.10	0.10	H	pH Units	1	1/7/2015 11:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/7/2015 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: *20-Jan-15*

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N014306-001B DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **97447**
Client ID: **ZZZZZZ** Batch ID: **R97447** TestNo: **SM4500-H+B** Analysis Date: **1/7/2015** SeqNo: **1903484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.610	0.10						7.550	0.792	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150107D**	QC Batch: **48346**				PrepDate	**1/7/2015**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	2400	33	33		mg/L	1	1/7/2015 02:40 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150107D**	QC Batch: **48346**				PrepDate	**1/7/2015**	Analyst: **RB**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	1/7/2015 02:40 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-48346** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/7/2015** RunNo: **97465**
Client ID: **PBW** Batch ID: **48346** TestNo: **SM2540C** Analysis Date: **1/7/2015** SeqNo: **1904116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48346** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/7/2015** RunNo: **97465**
Client ID: **LCSW** Batch ID: **48346** TestNo: **SM2540C** Analysis Date: **1/7/2015** SeqNo: **1904117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1000.000	10	1000	0	100	80	120				

Sample ID **N014305-001B-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/7/2015** RunNo: **97465**
Client ID: **ZZZZZZ** Batch ID: **48346** TestNo: **SM2540C** Analysis Date: **1/7/2015** SeqNo: **1904119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4115.000	50						4085	0.732	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150112B**	QC Batch: **48364**			PrepDate	**1/8/2015**		Analyst: **CEI**
Calcium	110000	58	500		µg/L	1	1/12/2015 02:34 PM
Iron	ND	1.3	20		µg/L	1	1/12/2015 02:34 PM
Magnesium	21000	11	100		µg/L	1	1/12/2015 02:34 PM
Sodium	810000	940	12000		µg/L	25	1/9/2015 11:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150112B**	QC Batch: **48364**			PrepDate	**1/8/2015**		Analyst: **CEI**
Calcium	240000	58	500		µg/L	1	1/12/2015 02:39 PM
Iron	ND	1.3	20		µg/L	1	1/12/2015 02:39 PM
Magnesium	29000	11	100		µg/L	1	1/12/2015 02:39 PM
Sodium	1500000	3800	50000		µg/L	100	1/9/2015 11:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: *20-Jan-15*

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-48364** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97489**
Client ID: **PBW** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/9/2015** SeqNo: **1906146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-48364** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97489**
Client ID: **LCSW** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/9/2015** SeqNo: **1906147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	17744.563	500	20000	0	88.7	85	115				

Sample ID **N014306-002A-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97489**
Client ID: **ZZZZZZ** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/9/2015** SeqNo: **1906158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1540549.691	50000	20000	1514000	134	75	125				S

Sample ID **N014306-002A-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97489**
Client ID: **ZZZZZZ** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/9/2015** SeqNo: **1906159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1516205.757	50000	20000	1514000	12.2	75	125	1541000	1.59	20	S

Sample ID **LCS1-48364** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97502**
Client ID: **LCSW** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/12/2015** SeqNo: **1906677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9645.117	500	10000	0	96.5	85	115				
Iron	111.418	20	100.0	0	111	85	115				
Magnesium	10442.727	100	10000	0	104	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N014305-001C-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97502**
Client ID: **ZZZZZZ** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/12/2015** SeqNo: **1906681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	189521.742	500	10000	185400	41.4	75	125				S
Iron	100.677	20	100.0	9.588	91.1	75	125				
Magnesium	35935.792	100	10000	26910	90.3	75	125				

Sample ID **N014305-001C-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97502**
Client ID: **ZZZZZZ** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/12/2015** SeqNo: **1906682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	191310.181	500	10000	185400	59.3	75	125	189500	0.939	20	S
Iron	102.411	20	100.0	9.588	92.8	75	125	100.7	1.71	20	
Magnesium	35987.370	100	10000	26910	90.8	75	125	35940	0.143	20	

Sample ID **MB-48364** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97502**
Client ID: **PBW** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/12/2015** SeqNo: **1906688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150114B**	QC Batch: **48365**				PrepDate	**1/8/2015**	Analyst: **CEI**
Manganese	33	0.026	0.50		µg/L	1	1/14/2015 03:13 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150114B**	QC Batch: **48365**				PrepDate	**1/8/2015**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	1/14/2015 03:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: *20-Jan-15*

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-48365** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97558**
Client ID: **PBW** Batch ID: **48365** TestNo: **EPA 200.8** Analysis Date: **1/14/2015** SeqNo: **1909708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.126	0.50									

Sample ID **LCS-48365** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97558**
Client ID: **LCSW** Batch ID: **48365** TestNo: **EPA 200.8** Analysis Date: **1/14/2015** SeqNo: **1909709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	102.767	0.50	100.0	0	103	85	115				

Sample ID **N014306-002A-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97558**
Client ID: **ZZZZZZ** Batch ID: **48365** TestNo: **EPA 200.8** Analysis Date: **1/14/2015** SeqNo: **1909716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	47.134	0.50	100.0	0	47.1	75	125				S

Sample ID **N014306-002A-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97558**
Client ID: **ZZZZZZ** Batch ID: **48365** TestNo: **EPA 200.8** Analysis Date: **1/14/2015** SeqNo: **1909717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	47.216	0.50	100.0	0	47.2	75	125	47.13	0.174	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150107A** QC Batch: **R97458**				PrepDate			Analyst: **RB**
Hexavalent Chromium	5.1	0.016	0.20		µg/L	1	1/7/2015 03:46 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_150114B** QC Batch: **48365**				PrepDate		**1/8/2015**	Analyst: **CEI**
Chromium	4.2	0.030	1.0		µg/L	1	1/14/2015 03:13 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150119B**	QC Batch: **R97596**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	790	2.8	20		µg/L	2	1/19/2015
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_150114B**	QC Batch: **48365**			PrepDate		**1/8/2015**	Analyst: **CEI**
Chromium	790	0.15	5.0		µg/L	5	1/14/2015 03:22 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-48365** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97558**
Client ID: **PBW** Batch ID: **48365** TestNo: **EPA 200.8** Analysis Date: **1/14/2015** SeqNo: **1909654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-48365** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97558**
Client ID: **LCSW** Batch ID: **48365** TestNo: **EPA 200.8** Analysis Date: **1/14/2015** SeqNo: **1909655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.846	1.0	10.00	0	108	85	115				

Sample ID **N014306-002A-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97558**
Client ID: **ZZZZZZ** Batch ID: **48365** TestNo: **EPA 200.8** Analysis Date: **1/14/2015** SeqNo: **1909666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	656.769	5.0	10.00	791.6	-1350	75	125				S

Sample ID **N014306-002A-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2015** RunNo: **97558**
Client ID: **ZZZZZZ** Batch ID: **48365** TestNo: **EPA 200.8** Analysis Date: **1/14/2015** SeqNo: **1909667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	653.177	5.0	10.00	791.6	-1380	75	125	656.8	0.548	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97458** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **PBW** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1903991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97458** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **LCSW** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1903992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.066	0.20	5.000	0	101	90	110				

Sample ID **N014302-002A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **ZZZZZZ** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1904002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	524.000	10						527.7	0.699	20	

Sample ID **N014302-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **ZZZZZZ** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1904003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	772.845	10	250.0	527.7	98.1	90	110				

Sample ID **N014302-002A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **ZZZZZZ** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1904004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	774.650	10	250.0	527.7	98.8	90	110	772.8	0.233	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014305-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **ZZZZZZ** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1904014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.221	0.20	1.000	0.1371	108	90	110				

Sample ID **N014306-001C-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **ZZZZZZ** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1904016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.284	0.20	5.000	5.139	103	90	110				

Sample ID **N014305-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **ZZZZZZ** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1904018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1139.260	20	500.0	643.0	99.2	90	110				

Sample ID **N014305-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97458**
Client ID: **ZZZZZZ** Batch ID: **R97458** TestNo: **EPA 218.6** Analysis Date: **1/7/2015** SeqNo: **1904022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.796	1.0	5.000	0.2975	110	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R97596** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **LCSW** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	251.902	10	250.0	0	101	85	115				

Sample ID **MB-R97596** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **PBW** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014381-001ADUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **ZZZZZZ** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	589.251	10						585.5	0.633	20	

Sample ID **N014306-002BMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **ZZZZZZ** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1294.554	20	500.0	795.0	99.9	85	115				

Sample ID **N014306-002BMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **97596**
Client ID: **ZZZZZZ** Batch ID: **R97596** TestNo: **SM 3500-Cr B** Analysis Date: **1/19/2015** SeqNo: **1911297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1294.660	20	500.0	795.0	99.9	85	115	1295	0.00819	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150113B**	QC Batch: **R97551**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	220	1.2	5.0		mg/L	1	1/13/2015
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	1/13/2015
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	1/13/2015
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	1/13/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150113B**	QC Batch: **R97551**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	140	1.2	5.0		mg/L	1	1/13/2015
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	1/13/2015
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	1/13/2015
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	1/13/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R97551** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97551**
Client ID: **LCSW** Batch ID: **R97551** TestNo: **SM 2320 B** Analysis Date: **1/13/2015** SeqNo: **1909095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	100.636	5.0	100.0	0	101	85	115				
Alkalinity, Total (As CaCO3)	100.636	5.0	100.0	0	101	85	115				

Sample ID **MB-R97551** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97551**
Client ID: **PBW** Batch ID: **R97551** TestNo: **SM 2320 B** Analysis Date: **1/13/2015** SeqNo: **1909096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014306-001BDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97551**
Client ID: **ZZZZZZ** Batch ID: **R97551** TestNo: **SM 2320 B** Analysis Date: **1/13/2015** SeqNo: **1909098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	221.398	5.0						221.4	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	221.398	5.0						221.4	0	30	

Sample ID **N014306-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97551**
Client ID: **ZZZZZZ** Batch ID: **R97551** TestNo: **SM 2320 B** Analysis Date: **1/13/2015** SeqNo: **1909100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	235.169	5.0	100.0	136.7	98.5	75	125				
Alkalinity, Total (As CaCO3)	235.169	5.0	100.0	136.7	98.5	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014306-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **97551**
Client ID: **ZZZZZZ** Batch ID: **R97551** TestNo: **SM 2320 B** Analysis Date: **1/13/2015** SeqNo: **1909101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	234.110	5.0	100.0	136.7	97.5	75	125	235.2	0.451	20	
Alkalinity, Total (As CaCO3)	234.110	5.0	100.0	136.7	97.5	75	125	235.2	0.451	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT: CH2M HILL
Lab Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00
Lab ID: N014306-001

Client Sample ID: PE-01-226
Collection Date: 1/6/2015 2:36:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150112A** QC Batch: **R97505**				PrepDate			Analyst: **QBM**
Chloride	1000	5.0	100		mg/L	200	1/12/2015 01:22 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150112A** QC Batch: **R97505**				PrepDate			Analyst: **QBM**
Sulfate	360	1.6	25		mg/L	50	1/12/2015 03:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150107A** QC Batch: **R97454**				PrepDate			Analyst: **PS**
Nitrate as N	ND	0.0051	0.050		mg/L	1	1/7/2015 05:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *20-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-226
Lab Order:	N014306	**Collection Date:**	1/6/2015 2:36:00 PM
Project:	PG&E Topock IM3Plant-EW, 652547.PT.0P.00	**Matrix:**	GROUNDWATER
Lab ID:	N014306-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150112A** QC Batch: **R97505**				PrepDate			Analyst: **QBM**
Chloride	2400	12	250		mg/L	500	1/12/2015 04:44 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150112A** QC Batch: **R97505**				PrepDate			Analyst: **QBM**
Sulfate	510	1.6	25		mg/L	50	1/12/2015 04:07 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150107A** QC Batch: **R97454**				PrepDate			Analyst: **PS**
Nitrate as N	3.0	0.010	0.10		mg/L	2	1/7/2015 05:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R97505_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97505**
Client ID: **PBW** Batch ID: **R97505** TestNo: **EPA 300.0** Analysis Date: **1/12/2015** SeqNo: **1906782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R97505_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97505**
Client ID: **LCSW** Batch ID: **R97505** TestNo: **EPA 300.0** Analysis Date: **1/12/2015** SeqNo: **1906783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.455	0.50	2.500	0	98.2	90	110				

Sample ID **N014306-001BMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97505**
Client ID: **ZZZZZZ** Batch ID: **R97505** TestNo: **EPA 300.0** Analysis Date: **1/12/2015** SeqNo: **1906789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1551.600	100	500.0	1045	101	80	120				

Sample ID **N014306-001BMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97505**
Client ID: **ZZZZZZ** Batch ID: **R97505** TestNo: **EPA 300.0** Analysis Date: **1/12/2015** SeqNo: **1906790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1560.600	100	500.0	1045	103	80	120	1552	0.578	20	

Sample ID **N014306-002CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97505**
Client ID: **ZZZZZZ** Batch ID: **R97505** TestNo: **EPA 300.0** Analysis Date: **1/12/2015** SeqNo: **1906792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2343.500	250						2360	0.723	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R97505_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97505
Client ID:	PBW	Batch ID:	R97505	TestNo:	EPA 300.0			Analysis Date:	1/12/2015	SeqNo:	1906747

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R97505_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97505
Client ID:	LCSW	Batch ID:	R97505	TestNo:	EPA 300.0			Analysis Date:	1/12/2015	SeqNo:	1906748

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.959	0.50	5.000	0	99.2	90	110				

Sample ID	N014302-003CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97505
Client ID:	ZZZZZZ	Batch ID:	R97505	TestNo:	EPA 300.0			Analysis Date:	1/12/2015	SeqNo:	1906759

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	118.040	10						120.6	2.16	20	

Sample ID	N014302-002CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97505
Client ID:	ZZZZZZ	Batch ID:	R97505	TestNo:	EPA 300.0			Analysis Date:	1/12/2015	SeqNo:	1906760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	129.030	5.0	50.00	81.38	95.3	80	120				

Sample ID	N014302-002CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	97505
Client ID:	ZZZZZZ	Batch ID:	R97505	TestNo:	EPA 300.0			Analysis Date:	1/12/2015	SeqNo:	1906761

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	131.760	5.0	50.00	81.38	101	80	120	129.0	2.09	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	**N014302-008CMS**	SampType:	**MS**	TestCode:	**300_W_SO4P**	Units:	**mg/L**	Prep Date:			RunNo:	**97505**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97505**	TestNo:	**EPA 300.0**			Analysis Date:	**1/12/2015**		SeqNo:	**1906762**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	55.375	2.5	25.00	30.74	98.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300WLLNO3PGE

Sample ID **MB-R97454_NO3** SampType: **MBLK** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97454**
Client ID: **PBW** Batch ID: **R97454** TestNo: **EPA 300.0** Analysis Date: **1/7/2015** SeqNo: **1903662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.050									

Sample ID **LCS-R97454_NO3** SampType: **LCS** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97454**
Client ID: **LCSW** Batch ID: **R97454** TestNo: **EPA 300.0** Analysis Date: **1/7/2015** SeqNo: **1903663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	0.969	0.050	1.000	0	96.9	90	110				

Sample ID **N014311-002C-DUP** SampType: **DUP** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97454**
Client ID: **ZZZZZZ** Batch ID: **R97454** TestNo: **EPA 300.0** Analysis Date: **1/7/2015** SeqNo: **1903679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	9.360	1.0						9.320	0.428	20	

Sample ID **N014311-002C-MS** SampType: **MS** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97454**
Client ID: **ZZZZZZ** Batch ID: **R97454** TestNo: **EPA 300.0** Analysis Date: **1/7/2015** SeqNo: **1903680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	28.000	1.0	20.00	9.320	93.4	80	120				

Sample ID **N014311-002C-MSD** SampType: **MSD** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97454**
Client ID: **ZZZZZZ** Batch ID: **R97454** TestNo: **EPA 300.0** Analysis Date: **1/7/2015** SeqNo: **1903681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	27.940	1.0	20.00	9.320	93.1	80	120	28.00	0.215	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300WLLNO3PGE

Sample ID **N014311-003C-DUP** SampType: **DUP** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97454**
Client ID: **ZZZZZZ** Batch ID: **R97454** TestNo: **EPA 300.0** Analysis Date: **1/7/2015** SeqNo: **1903682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	6.220	1.0						6.400	2.85	20	

Sample ID **N014311-003C-MS** SampType: **MS** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97454**
Client ID: **ZZZZZZ** Batch ID: **R97454** TestNo: **EPA 300.0** Analysis Date: **1/7/2015** SeqNo: **1903683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	24.060	1.0	20.00	6.400	88.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

WORK ORDER: N014306

ANALYST LIST

NAME	TEST METHOD
Quennie Manimtim	EPA 300, SM 3500-Cr B, SM 2320B
Claire Ignacio	EPA 200.7, EPA 200.8
Ryan Balilu	EPA 218.6
Lilia Ramit	EPA 120.1, SM 2540C, SM 4500 H+B

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151W. Post Road, Las Vegas, NV 89118
(702) 307-2659 FAX: (702) 307-2691

CHAIN OF CUSTODY RECORD

[IM3Plant-EW-226]

TURNAROUND TIME 10 Days
DATE 01/06/15 PAGE 1 OF 1

COMPANY: CH2M HILL
PROJECT NAME: PG&E Topock IM3Plant-EW
PHONE: 530-229-3303 FAX: 530-339-3303
ADDRESS: 155 Grand Ave Ste 1000, Oakland, CA 94612
P.O. NUMBER: 652547.PT.0P.00
SAMPLERS (SIGNATURE

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr, Mn (200.8) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1) Cl,SO4,NO3(300.0)	TDS (160.1), Alk (SM2320B)	Cr(VI) (218.6)	Dis Ca,Mg,Na,Fe (200.7) Lab filtered									NUMBER OF CONTAINERS	COMMENTS
PE-01-226	01/06/15		Ground water	X		X	X	X	X									4	N014306-01
TW-03D-226	01/06/15		Ground water	X	X	X	X		X									4	-02
																		8	TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished) Josh Rosenberg	Josh Rosenberg	CH2MHill	1-6-15 1451
Signature (Received)	Philander Galang	ASSET LABS	1-6-15 1451
Signature (Relinquished)	Philander Galang	ASSET LABS	1-6-15 2043
Signature (Received)	Philander Galang	ASSET LABS	1-6-15 2043
Signature (Relinquished)			
Signature (Received)			

1-5-C
TEMP

SAMPLE CONDITIONS
RECEIVED COOL ☑ WARM ☐ °F
CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/6/2015	Workorder:	N014306
Rep sample Temp (Deg C):	1.5	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☐	No ☑	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☑	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: Sample for pH analysis is past holding time upon receipt. Samples for metal analysis are lab filtered then preserved. Sampler's initial taken from Sample containers.

Checklist Completed By JPG jpg 01/08/15

Reviewed By: gog 01/08/15

Sample Control

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Wednesday, January 07, 2015 11:49 AM
To: Shawn.Duffy@CH2M.com
Cc: 'SampleControl.LV@assetlaboratories.com'; 'John Paolo Gumawid'; 'Glen Gesmundo'
Subject: Topock Weekly sample

Hi Shawn!

Per our conversation this morning, below are what we discussed and agreed upon on the initial weekly samples that we got from Topock yesterday;

A. For samples 700B, 100B and 701
   1. Cr+6 – we will filter and preserve the sample accordingly.
   2. Metals – we will report Totals so we will only preserve the sample.
   3. NO3/NO2 – we will transfer and preserve sample and analyzed using SM4500NO3F as N.
   4. NO3 – will no longer be reported by 300.0
   5. NH3 – send to TLI
   6. Sampling Time – We will take this from the sample container.
   7. Prelims/Verbal result (Cr+6, TDs, T. Cr) – will be ready by Thursday.
B. For samples PE-01 and TW-03D
   1. Cr+6 – we will filter and preserve the sample accordingly.
   2. Metals – we will filter and preserve the sample accordingly.
   3. Sampling Time – We will take this from the sample container.
C. Sludge
   1. We will report in dry weight.

Please let me know if I missed something. Please send a revised COC at your most convenient time.

Thanks,

Marlon Cartin
Project Manager
California: 11060 Artesia Blvd., Ste. C, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.882.3289
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ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ **Groundwater**

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014306-001B,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.0875-61.0151)*1000000}{30}$$

$$= 2413.33092 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2400 mg/L

Julia Ramit 1/9/2015

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Finished: 1/8/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-48346	100	55.5515	55.552	5	1	5		
LCS-48346	100	64.2612	64.3612	1000	1	1000		
N014305-001B	20	60.3391	60.4208	817	5	4085	7530	0.542
N014305-001B DUP	20	59.8962	59.9785	823	5	4115	7530	0.546
N014305-002B	20	64.2459	64.3301	842	5	4210	7480	0.563
N014305-003C	5	61.1219	61.1965	746	20	14920	22500	0.663
N014306-001B	30	61.0151	61.0875	724	3.33333	2413.33092	4300	0.561
N014306-002C	20	60.31	60.4059	959	5	4795	8380	0.572
N014309-001D	75	63.5017	63.5692	675	1.33333	899.99775	1539	0.585
N014309-002D	100	53.6748	53.741	662	1	662	935	0.708
N014310-001C	100	55.7305	55.7917	612	1	612	793	0.772
N014310-002C	100	62.9833	63.0453	620	1	620	812	0.764
N014310-003C	100	56.0295	56.0873	578	1	578	729	0.793

Julia Ramit 1/9/2015 12:47 PM

Sample Calculation

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Sodium concentration, in ug/L, in the original sample as follows:

Sodium, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014306-001A**, the concentration in ug/L is calculated as follows:

Sodium, ug/L = 32.2964 * 25 * (25/25) * 1000

= 807410.8

Reporting results in two significant figures,

Sodium, ug/L = 810000

1/16/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014306
Test Method: EPA 200.7
Analysis Date: 01/09/15

Matrix: Groundwater
Batch No.: 48364

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014306-002A-DT 5X	Sodum	ug/L	1545301.00	PASS	1513763.00	2.08%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014306
Test Method: EPA 200.7
Analysis Date: 01/12/15

Matrix: Groundwater
Batch No.: 48364

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.
Dilution test failed for Ca & Mg. However, PS passed criteria for Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014305-001C DT 5X	Calcium	ug/L	204490.80	FAIL	185380.95	10.3%	10%
N014305-001C DT 5X	Iron	ug/L	0	NA	9.588467	100%	10%
N014305-001C DT 5X	Magnesium	ug/L	32318.30	FAIL	26908.16	20%	10%

Note: NA - Not Applicable

ASSET Laboratories

Date: *12-Jan-15*

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N014306-002A-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **97489**
Client ID: **ZZZZZZ** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/9/2015** SeqNo: **1906155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1545355.874	50000	20000	1514000	158	80	120				S

Sample ID **N014305-001C-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **97502**
Client ID: **ZZZZZZ** Batch ID: **48364** TestNo: **EPA 200.7** Analysis Date: **1/12/2015** SeqNo: **1906680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	203932.508	500	10000	185400	186	80	120				S
Iron	133.072	20	100.0	9.588	123	80	120				S
Magnesium	37407.263	100	10000	26910	105	80	120				

DT of Na @500x and MS/MSD of Fe are within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 1/16/2015

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014306-002A,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 158.310566742955 * 5 * (25/25)

= 791.552833714775

Reporting results in two significant figures,

Chromium, ug/L = 790

1/19/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014306
Test Method: EPA 6020
Analysis Date: 1/14/2015

Matrix: Groundwater
Batch No.: 48365

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn. The calculated value is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014306-002A-DT 25X	Chromium	µg/L	715.6166605	PASS	791.5528337	9.59%	10
N014306-002A-DT 5X	Manganese	µg/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories

Date: *16-Jan-15*

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	**N014306-002A-PS**	SampType:	**PS**	TestCode:	**200.8_WDISS**	Units:	**µg/L**	Prep Date:		RunNo:	**97558**
Client ID:	**ZZZZZZ**	Batch ID:	**48365**	TestNo:	**EPA 200.8**			Analysis Date:	**1/14/2015**	SeqNo:	**1909715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	46.431	0.50	100.0	0	46.4	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014306
Project: PG&E Topock IM3Plant-EW, 652547.PT.0P.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**N014306-002A-PS**	SampType:	**PS**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:				RunNo:	**97558**
Client ID:	**ZZZZZZ**	Batch ID:	**48365**	TestNo:	**EPA 200.8**			Analysis Date:	**1/14/2015**			SeqNo:	**1909665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	679.963	5.0	10.00	791.6	-1120	80	120				S

DT @25x is within criteria

1/20/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014306-001C** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 5.1391 * 1

= 5.1391

Reporting result in two significant figures,

Cr^{+6}, µg/L = 5.1

Nancy 1/16/2015

Sample ID: **N014306-001B @ pH 7.66**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.8mL)

= **0.02118644 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (10.45) (0.02118644 N) (1) * 1000

=221.3983 **mg/L**

Reporting results in two significant figures,

= 220 **mg/L** as CaCO3

1/20/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02118644 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (10.45 mL) (0.02118644N) (1) * 1000

= 221.3983 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 221.3983 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 220 **mg/L**

1/20/2015

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014306-001B** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 7.22 * 50

= 361

Reporting result in two significant figures,

Sulfate, mg/L = 360

pln

Sample Calculation

METHOD: EPA 3500_Cr
TEST NAME: HEXAVALENT CHROMIUM
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = ug/L, UV-VIS Cr^{+6} calculated concentration
DF = dilution factor

For **N014306-002B**, concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 397.482 * 2

= 794.964 µg/L

Reporting results in two significant figures:

Cr^{+6}, µg/L = 790 µg/L

1/20/2015

January 29, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014382

RE: PG&E Topock 659054.01.03.02

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 14, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *29-Jan-15*

CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014382

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6010B_Total:

Matrix Spike (MS) on QC sample N014382-013B-MS is outside recovery criteria for Iron possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) on QC sample N014402-001B-MS is outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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ASSET Laboratories

Date: *29-Jan-15*

CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014382
Contract No: 2015-RMP-199

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014382-001A	C-BNS-D-199	Water	1/14/2015 10:34:00 AM	1/14/2015	1/29/2015
N014382-001B	C-BNS-D-199	Water	1/14/2015 10:34:00 AM	1/14/2015	1/29/2015
N014382-001C	C-BNS-D-199	Water	1/14/2015 10:34:00 AM	1/14/2015	1/29/2015
N014382-001D	C-BNS-D-199	Water	1/14/2015 10:34:00 AM	1/14/2015	1/29/2015
N014382-001E	C-BNS-D-199	Water	1/14/2015 10:34:00 AM	1/14/2015	1/29/2015
N014382-002A	C-I-3-D-199	Water	1/14/2015 9:18:00 AM	1/14/2015	1/29/2015
N014382-002B	C-I-3-D-199	Water	1/14/2015 9:18:00 AM	1/14/2015	1/29/2015
N014382-002C	C-I-3-D-199	Water	1/14/2015 9:18:00 AM	1/14/2015	1/29/2015
N014382-002D	C-I-3-D-199	Water	1/14/2015 9:18:00 AM	1/14/2015	1/29/2015
N014382-002E	C-I-3-D-199	Water	1/14/2015 9:18:00 AM	1/14/2015	1/29/2015
N014382-003A	C-I-3-S-199	Water	1/14/2015 9:26:00 AM	1/14/2015	1/29/2015
N014382-003B	C-I-3-S-199	Water	1/14/2015 9:26:00 AM	1/14/2015	1/29/2015
N014382-003C	C-I-3-S-199	Water	1/14/2015 9:26:00 AM	1/14/2015	1/29/2015
N014382-003D	C-I-3-S-199	Water	1/14/2015 9:26:00 AM	1/14/2015	1/29/2015
N014382-003E	C-I-3-S-199	Water	1/14/2015 9:26:00 AM	1/14/2015	1/29/2015
N014382-004A	C-MAR-S-199	Water	1/14/2015 8:10:00 AM	1/14/2015	1/29/2015
N014382-004B	C-MAR-S-199	Water	1/14/2015 8:10:00 AM	1/14/2015	1/29/2015
N014382-004C	C-MAR-S-199	Water	1/14/2015 8:10:00 AM	1/14/2015	1/29/2015
N014382-004D	C-MAR-S-199	Water	1/14/2015 8:10:00 AM	1/14/2015	1/29/2015
N014382-004E	C-MAR-S-199	Water	1/14/2015 8:10:00 AM	1/14/2015	1/29/2015
N014382-005A	C-MW-80-199	Water	1/14/2015 8:00:00 AM	1/14/2015	1/29/2015
N014382-006A	C-MW-81-199	Water	1/14/2015 9:40:00 AM	1/14/2015	1/29/2015
N014382-007A	C-R22A-D-199	Water	1/14/2015 10:06:00 AM	1/14/2015	1/29/2015
N014382-007B	C-R22A-D-199	Water	1/14/2015 10:06:00 AM	1/14/2015	1/29/2015
N014382-007C	C-R22A-D-199	Water	1/14/2015 10:06:00 AM	1/14/2015	1/29/2015
N014382-007D	C-R22A-D-199	Water	1/14/2015 10:06:00 AM	1/14/2015	1/29/2015
N014382-007E	C-R22A-D-199	Water	1/14/2015 10:06:00 AM	1/14/2015	1/29/2015
N014382-008A	C-R22A-S-199	Water	1/14/2015 10:14:00 AM	1/14/2015	1/29/2015
N014382-008B	C-R22A-S-199	Water	1/14/2015 10:14:00 AM	1/14/2015	1/29/2015

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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014382
Contract No: 2015-RMP-199

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014382-008C	C-R22A-S-199	Water	1/14/2015 10:14:00 AM	1/14/2015	1/29/2015
N014382-008D	C-R22A-S-199	Water	1/14/2015 10:14:00 AM	1/14/2015	1/29/2015
N014382-008E	C-R22A-S-199	Water	1/14/2015 10:14:00 AM	1/14/2015	1/29/2015
N014382-009A	C-R27-D-199	Water	1/14/2015 10:52:00 AM	1/14/2015	1/29/2015
N014382-009B	C-R27-D-199	Water	1/14/2015 10:52:00 AM	1/14/2015	1/29/2015
N014382-009C	C-R27-D-199	Water	1/14/2015 10:52:00 AM	1/14/2015	1/29/2015
N014382-009D	C-R27-D-199	Water	1/14/2015 10:52:00 AM	1/14/2015	1/29/2015
N014382-009E	C-R27-D-199	Water	1/14/2015 10:52:00 AM	1/14/2015	1/29/2015
N014382-010A	C-R27-S-199	Water	1/14/2015 11:04:00 AM	1/14/2015	1/29/2015
N014382-010B	C-R27-S-199	Water	1/14/2015 11:04:00 AM	1/14/2015	1/29/2015
N014382-010C	C-R27-S-199	Water	1/14/2015 11:04:00 AM	1/14/2015	1/29/2015
N014382-010D	C-R27-S-199	Water	1/14/2015 11:04:00 AM	1/14/2015	1/29/2015
N014382-010E	C-R27-S-199	Water	1/14/2015 11:04:00 AM	1/14/2015	1/29/2015
N014382-011A	C-TAZ-D-199	Water	1/14/2015 8:44:00 AM	1/14/2015	1/29/2015
N014382-011B	C-TAZ-D-199	Water	1/14/2015 8:44:00 AM	1/14/2015	1/29/2015
N014382-011C	C-TAZ-D-199	Water	1/14/2015 8:44:00 AM	1/14/2015	1/29/2015
N014382-011D	C-TAZ-D-199	Water	1/14/2015 8:44:00 AM	1/14/2015	1/29/2015
N014382-011E	C-TAZ-D-199	Water	1/14/2015 8:44:00 AM	1/14/2015	1/29/2015
N014382-012A	C-TAZ-S-199	Water	1/14/2015 8:56:00 AM	1/14/2015	1/29/2015
N014382-012B	C-TAZ-S-199	Water	1/14/2015 8:56:00 AM	1/14/2015	1/29/2015
N014382-012C	C-TAZ-S-199	Water	1/14/2015 8:56:00 AM	1/14/2015	1/29/2015
N014382-012D	C-TAZ-S-199	Water	1/14/2015 8:56:00 AM	1/14/2015	1/29/2015
N014382-012E	C-TAZ-S-199	Water	1/14/2015 8:56:00 AM	1/14/2015	1/29/2015
N014382-013A	R63-199	Water	1/14/2015 9:45:00 AM	1/14/2015	1/29/2015
N014382-013B	R63-199	Water	1/14/2015 9:45:00 AM	1/14/2015	1/29/2015
N014382-013C	R63-199	Water	1/14/2015 9:45:00 AM	1/14/2015	1/29/2015
N014382-013D	R63-199	Water	1/14/2015 9:45:00 AM	1/14/2015	1/29/2015
N014382-013E	R63-199	Water	1/14/2015 9:45:00 AM	1/14/2015	1/29/2015
N014382-014A	RMP-AB1-199	Water	1/14/2015 11:15:00 AM	1/14/2015	1/29/2015
N014382-015A	SW1-199	Water	1/14/2015 12:50:00 PM	1/14/2015	1/29/2015

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014382
Contract No: 2015-RMP-199

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014382-015B	SW1-199	Water	1/14/2015 12:50:00 PM	1/14/2015	1/29/2015
N014382-015C	SW1-199	Water	1/14/2015 12:50:00 PM	1/14/2015	1/29/2015
N014382-016A	SW2-199	Water	1/14/2015 1:00:00 PM	1/14/2015	1/29/2015
N014382-016B	SW2-199	Water	1/14/2015 1:00:00 PM	1/14/2015	1/29/2015
N014382-016C	SW2-199	Water	1/14/2015 1:00:00 PM	1/14/2015	1/29/2015

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:34:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:18:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:06:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:14:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:52:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:44:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 12:50:00 PM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 1:00:00 PM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150115C**	QC Batch: **R97562**			PrepDate			Analyst: **RB**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/15/2015 11:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014381-001C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97562**
Client ID: **ZZZZZZ** Batch ID: **R97562** TestNo: **EPA 120.1** Analysis Date: **1/15/2015** SeqNo: **1909918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2070.000	0.10						2070	0	10	

Sample ID **N014382-001D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97562**
Client ID: **ZZZZZZ** Batch ID: **R97562** TestNo: **EPA 120.1** Analysis Date: **1/15/2015** SeqNo: **1909920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	933.000	0.10						936.0	0.321	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:34:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:18:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.1	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:06:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:14:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:52:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:44:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 12:50:00 PM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	7.6	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 1:00:00 PM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150115F**	QC Batch: **R97601**			PrepDate			Analyst: **RB**
pH	7.6	0.10	0.10	H	pH Units	1	1/15/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/15/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N014382-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **97601**
Client ID: **ZZZZZZ** Batch ID: **R97601** TestNo: **SM4500-H+B** Analysis Date: **1/15/2015** SeqNo: **1914928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.220	0.10						8.190	0.366	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N014382-002DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **97601**
Client ID: **ZZZZZZ** Batch ID: **R97601** TestNo: **SM4500-H+B** Analysis Date: **1/15/2015** SeqNo: **1914930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.240	0.10						8.220	0.243	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:34:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:18:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	52	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:06:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:14:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:52:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**			PrepDate	**1/19/2015**		Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:44:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119D**	QC Batch: **48458**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *29-Jan-15*

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-48458	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97622
Client ID:	PBW	Batch ID:	48458	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1913079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-48458	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97622
Client ID:	LCSW	Batch ID:	48458	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1913080

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	851.000	10	1000	0	85.1	80	120				

Sample ID	N014382-001D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97622
Client ID:	ZZZZZZ	Batch ID:	48458	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1913083

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-48459	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97704
Client ID:	PBW	Batch ID:	48459	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1918482

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-48459	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97704
Client ID:	LCSW	Batch ID:	48459	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1918483

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	929.000	10	1000	0	92.9	80	120				

Sample ID	N014396-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97704
Client ID:	ZZZZZZ	Batch ID:	48459	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1918487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:34:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 09:32 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 09:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:18:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 10:12 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 09:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 10:31 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 09:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 11:12 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-80-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:00:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 11:33 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-81-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:40:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 11:53 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:06:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 12:13 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 09:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:14:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 12:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:52:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 01:13 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 10:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119A** QC Batch: **R97620** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 01:33 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48462** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 10:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:44:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119A** QC Batch: **R97620** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 01:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48462** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 10:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119A** QC Batch: **R97620** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 02:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48462** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 02:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate	**1/19/2015**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 11:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB1-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 11:15:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 03:12 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 12:50:00 PM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 03:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 11:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 1:00:00 PM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 05:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/19/2015 11:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *29-Jan-15*

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R97620** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **PBW** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97620** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **LCSW** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.976	0.20	5.000	0	99.5	90	110				

Sample ID **N014382-001A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.063	0.20						0.05530	0	20	

Sample ID **N014382-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.05530	101	90	110				

Sample ID **N014382-001A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.05530	106	90	110	1.069	4.66	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014382-002A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0.05600	103	90	110				

Sample ID **N014382-003A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.06550	100	90	110				

Sample ID **N014382-004A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.109	0.20	1.000	0.06980	104	90	110				

Sample ID **N014382-007A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.06660	102	90	110				

Sample ID **N014382-008A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.06800	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014382-009A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0.06250	100	90	110				

Sample ID **N014382-010A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.106	0.20	1.000	0.05370	105	90	110				

Sample ID **N014382-011A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.125	0.20	1.000	0.07140	105	90	110				

Sample ID **N014382-012A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.138	0.20	1.000	0.05250	109	90	110				

Sample ID **N014382-013A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.115	0.20	1.000	0.06640	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014382-015A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.184	0.20	1.000	0.1234	106	90	110				

Sample ID **N014382-016A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.1062	101	90	110				

Sample ID **N014396-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0.06850	98.4	90	110				

Sample ID **N014396-002A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0.05000	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **MB-R97620** SampType: **MBLK** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **PBW** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97620** SampType: **LCS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **LCSW** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.976	0.20	5.000	0	99.5	90	110				

Sample ID **N014382-001A-DUP** SampType: **DUP** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.063	0.20						0.05530	0	20	

Sample ID **N014382-001A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.05530	101	90	110				

Sample ID **N014382-001A-MSD** SampType: **MSD** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.05530	106	90	110	1.069	4.66	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **N014382-005A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0.05860	102	90	110				

Sample ID **N014382-006A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0.07650	96.9	90	110				

Sample ID **N014382-014A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0.05970	101	90	110				

Sample ID **N014396-003A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.047	0.20	1.000	0.05560	99.2	90	110				

Sample ID **N014396-004A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.07820	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-48462	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	PBW	Batch ID:	48462	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	1/19/2015	SeqNo:	1913400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-48462	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	LCSW	Batch ID:	48462	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	1/19/2015	SeqNo:	1913401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.255	1.0	10.00	0	103	85	115				

Sample ID	N014382-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	ZZZZZZ	Batch ID:	48462	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	1/20/2015	SeqNo:	1913439

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.657	1.0	10.00	0.04990	96.1	75	125				

Sample ID	N014382-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	ZZZZZZ	Batch ID:	48462	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	1/20/2015	SeqNo:	1913441

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.674	1.0	10.00	0.04990	96.2	75	125	9.657	0.176	20	

Sample ID	N014382-013C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/19/2015	RunNo:	97625
Client ID:	ZZZZZZ	Batch ID:	48462	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	1/20/2015	SeqNo:	1913443

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.744	1.0	10.00	0.05641	96.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:34:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150121E** QC Batch: **R97686** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.31	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:18:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150121E**	QC Batch: **R97686**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150121E**	QC Batch: **R97686**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150121E** QC Batch: **R97686** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:06:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150121E**	QC Batch: **R97686**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:14:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150121E** QC Batch: **R97686** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.31	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:52:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150121E** QC Batch: **R97686** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150121E** QC Batch: **R97686** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:44:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150121E**	QC Batch: **R97686**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150121E**	QC Batch: **R97686**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150121E** QC Batch: **R97686** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.31	0.022	0.050		mg/L	1	1/21/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *29-Jan-15*

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97686** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97686**
Client ID: **PBW** Batch ID: **R97686** TestNo: **SM4500-NO3** Analysis Date: **1/21/2015** SeqNo: **1917212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97686** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97686**
Client ID: **LCSW** Batch ID: **R97686** TestNo: **SM4500-NO3** Analysis Date: **1/21/2015** SeqNo: **1917213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.006	0.050	1.000	0	101	85	115				

Sample ID **N014382-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97686**
Client ID: **ZZZZZZ** Batch ID: **R97686** TestNo: **SM4500-NO3** Analysis Date: **1/21/2015** SeqNo: **1917215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.362	0.050						0.3114	14.9	20	

Sample ID **N014382-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97686**
Client ID: **ZZZZZZ** Batch ID: **R97686** TestNo: **SM4500-NO3** Analysis Date: **1/21/2015** SeqNo: **1917216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.319	0.050	1.000	0.3114	101	75	125				

Sample ID **N014382-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97686**
Client ID: **ZZZZZZ** Batch ID: **R97686** TestNo: **SM4500-NO3** Analysis Date: **1/21/2015** SeqNo: **1917217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.374	0.050	1.000	0.3114	106	75	125	1.319	4.07	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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"Serving Clients with Passion and Professionalism"

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ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:34:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 01:58 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	41	1.3	20		ug/L	1	1/22/2015 10:42 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:18:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 03:31 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	49	1.3	20		ug/L	1	1/22/2015 11:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 02:07 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	42	1.3	20		ug/L	1	1/22/2015 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	22	1.3	20		ug/L	1	1/21/2015 02:11 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	1100	1.3	20		ug/L	1	1/22/2015 11:15 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:06:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 02:21 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	47	1.3	20		ug/L	1	1/22/2015 11:29 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:14:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 02:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	39	1.3	20		ug/L	1	1/22/2015 11:33 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:52:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 02:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	42	1.3	20		ug/L	1	1/22/2015 11:37 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 02:44 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	30	1.3	20		ug/L	1	1/22/2015 11:42 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:44:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 02:48 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	38	1.3	20		ug/L	1	1/22/2015 11:46 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 02:53 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	60	1.3	20		ug/L	1	1/22/2015 11:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48467**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 03:12 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48480**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	82	1.3	20		ug/L	1	1/22/2015 11:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *29-Jan-15*

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LCS1-48467	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97664
Client ID:	LCSW	Batch ID:	48467	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/21/2015	SeqNo:	1915571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.741	20	100.0	0	103	85	115				

Sample ID	N014355-001A-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97664
Client ID:	ZZZZZZ	Batch ID:	48467	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/21/2015	SeqNo:	1915575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.729	20	100.0	7.766	99.0	75	125				

Sample ID	N014355-001A-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97664
Client ID:	ZZZZZZ	Batch ID:	48467	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/21/2015	SeqNo:	1915577

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.704	20	100.0	7.766	98.9	75	125	106.7	0.0236	20	

Sample ID	MB-48467	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97664
Client ID:	PBW	Batch ID:	48467	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/21/2015	SeqNo:	1915582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	N014382-004C-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97664
Client ID:	ZZZZZZ	Batch ID:	48467	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/21/2015	SeqNo:	1915590

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	122.234	20	100.0	22.41	99.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-48480	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97673
Client ID:	PBW	Batch ID:	48480	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916825

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-48480	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97673
Client ID:	LCSW	Batch ID:	48480	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916826

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.066	20	100.0	0	98.1	85	115				

Sample ID	N014382-001B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97673
Client ID:	ZZZZZZ	Batch ID:	48480	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	126.448	20	100.0	41.22	85.2	75	125				

Sample ID	N014382-001B-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97673
Client ID:	ZZZZZZ	Batch ID:	48480	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916831

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	128.081	20	100.0	41.22	86.9	75	125	126.4	1.28	20	

Sample ID	N014382-013B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/20/2015	RunNo:	97673
Client ID:	ZZZZZZ	Batch ID:	48480	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916844

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	214.282	20	100.0	82.11	132	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:34:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	1/19/2015 09:01 PM
Barium	130	0.15	5.0		µg/L	5	1/19/2015 09:07 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 09:01 PM
Molybdenum	4.7	0.15	0.50		µg/L	1	1/19/2015 09:01 PM
Selenium	1.4	0.069	0.50		µg/L	1	1/19/2015 09:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:18:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	1/19/2015 09:13 PM
Barium	130	0.030	1.0		µg/L	1	1/19/2015 09:13 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 09:13 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	1/19/2015 09:13 PM
Selenium	1.2	0.069	0.50		µg/L	1	1/19/2015 09:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**				PrepDate	**1/19/2015**	Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	1/19/2015 09:25 PM
Barium	130	0.030	1.0		µg/L	1	1/19/2015 09:25 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 09:25 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/19/2015 09:25 PM
Selenium	1.2	0.069	0.50		µg/L	1	1/19/2015 09:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	1/19/2015 09:37 PM
Barium	120	0.030	1.0		µg/L	1	1/19/2015 09:37 PM
Manganese	28	0.026	0.50		µg/L	1	1/19/2015 09:37 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/19/2015 09:37 PM
Selenium	1.4	0.069	0.50		µg/L	1	1/19/2015 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:06:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**				PrepDate	**1/19/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	1/19/2015 09:59 PM
Barium	130	0.030	1.0		µg/L	1	1/19/2015 09:59 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 09:59 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/19/2015 09:59 PM
Selenium	1.5	0.069	0.50		µg/L	1	1/23/2015 04:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:14:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**				PrepDate	**1/19/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	1/19/2015 10:10 PM
Barium	120	0.030	1.0		µg/L	1	1/19/2015 10:10 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 10:10 PM
Molybdenum	4.7	0.15	0.50		µg/L	1	1/19/2015 10:10 PM
Selenium	1.3	0.069	0.50		µg/L	1	1/19/2015 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 10:52:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**				PrepDate	**1/19/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	1/19/2015 10:21 PM
Barium	120	0.030	1.0		µg/L	1	1/19/2015 10:21 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 10:21 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/19/2015 10:21 PM
Selenium	1.5	0.069	0.50		µg/L	1	1/23/2015 04:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	1/19/2015 10:32 PM
Barium	120	0.030	1.0		µg/L	1	1/19/2015 10:32 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 10:32 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/19/2015 10:32 PM
Selenium	1.2	0.069	0.50		µg/L	1	1/19/2015 10:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:44:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**				PrepDate	**1/19/2015**	Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	1/19/2015 10:43 PM
Barium	120	0.030	1.0		µg/L	1	1/19/2015 10:43 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 10:43 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/19/2015 10:43 PM
Selenium	1.5	0.069	0.50		µg/L	1	1/23/2015 04:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**				PrepDate	**1/19/2015**	Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	1/19/2015 11:05 PM
Barium	120	0.030	1.0		µg/L	1	1/19/2015 11:05 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 11:05 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	1/19/2015 11:05 PM
Selenium	1.4	0.069	0.50		µg/L	1	1/19/2015 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-Jan-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-199
Lab Order:	N014382	**Collection Date:**	1/14/2015 9:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014382-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48462**				PrepDate	**1/19/2015**	Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	1/19/2015 11:16 PM
Barium	130	0.15	5.0		µg/L	5	1/19/2015 11:21 PM
Manganese	ND	0.026	0.50		µg/L	1	1/19/2015 11:16 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	1/19/2015 11:16 PM
Selenium	1.3	0.069	0.50		µg/L	1	1/19/2015 11:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *29-Jan-15*

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48462** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **PBW** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/19/2015** SeqNo: **1914739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48462** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **LCSW** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/19/2015** SeqNo: **1914740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.127	0.10	10.00	0	101	85	115				
Barium	109.758	1.0	100.0	0	110	85	115				
Manganese	101.523	0.50	100.0	0	102	85	115				
Molybdenum	10.445	0.50	10.00	0	104	85	115				
Selenium	9.165	0.50	10.00	0	91.6	85	115				

Sample ID **N014382-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.017	0.10	10.00	2.383	96.3	75	125				
Manganese	90.544	0.50	100.0	0	90.5	75	125				
Molybdenum	16.141	0.50	10.00	4.700	114	75	125				
Selenium	9.955	0.50	10.00	1.428	85.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014382-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	240.785	5.0	100.0	129.6	111	75	125				

Sample ID **N014382-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.936	0.10	10.00	2.383	95.5	75	125	12.02	0.684	20	
Manganese	89.990	0.50	100.0	0	90.0	75	125	90.54	0.613	20	
Molybdenum	16.000	0.50	10.00	4.700	113	75	125	16.14	0.874	20	
Selenium	9.698	0.50	10.00	1.428	82.7	75	125	9.955	2.61	20	

Sample ID **N014382-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	243.282	5.0	100.0	129.6	114	75	125	240.8	1.03	20	

Sample ID **N014382-013C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.583	0.10	10.00	2.468	101	75	125				
Manganese	91.309	0.50	100.0	0	91.3	75	125				
Molybdenum	15.833	0.50	10.00	4.503	113	75	125				
Selenium	10.612	0.50	10.00	1.289	93.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014382-013C-MS**	SampType:	**MS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**1/19/2015**	RunNo:	**97625**		
Client ID:	**ZZZZZZ**	Batch ID:	**48462**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/20/2015**	SeqNo:	**1914783**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Barium		251.693	5.0	100.0	129.2	123	75	125					

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48492** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/22/2015** RunNo: **97729**
Client ID: **PBW** Batch ID: **48492** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/23/2015** SeqNo: **1919595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48492** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/22/2015** RunNo: **97729**
Client ID: **LCSW** Batch ID: **48492** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/23/2015** SeqNo: **1919596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.761	0.10	10.00	0	97.6	85	115				
Barium	104.154	1.0	100.0	0	104	85	115				
Manganese	98.529	0.50	100.0	0	98.5	85	115				
Molybdenum	10.103	0.50	10.00	0	101	85	115				
Selenium	8.743	0.50	10.00	0	87.4	85	115				

Sample ID **N014380-001E-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/22/2015** RunNo: **97729**
Client ID: **ZZZZZZ** Batch ID: **48492** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/23/2015** SeqNo: **1919600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.115	0.10	10.00	13.47	96.5	75	125				
Manganese	81.027	0.50	100.0	0	81.0	75	125				
Molybdenum	28.650	0.50	10.00	16.91	117	75	125				
Selenium	9.297	0.50	10.00	0.7084	85.9	75	125				

Sample ID **N014380-001E-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/22/2015** RunNo: **97729**
Client ID: **ZZZZZZ** Batch ID: **48492** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/23/2015** SeqNo: **1919601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014380-001E-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/22/2015** RunNo: **97729**
Client ID: **ZZZZZZ** Batch ID: **48492** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/23/2015** SeqNo: **1919601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.401	0.10	10.00	13.47	99.4	75	125	23.11	1.23	20	
Manganese	80.293	0.50	100.0	0	80.3	75	125	81.03	0.911	20	
Molybdenum	29.074	0.50	10.00	16.91	122	75	125	28.65	1.47	20	
Selenium	9.900	0.50	10.00	0.7084	91.9	75	125	9.297	6.28	20	

Sample ID **N014402-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/22/2015** RunNo: **97729**
Client ID: **ZZZZZZ** Batch ID: **48492** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/23/2015** SeqNo: **1919611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	118.979	1.0	100.0	15.51	103	75	125				
Manganese	82.753	0.50	100.0	0	82.8	75	125				
Molybdenum	122.532	0.50	10.00	110.0	125	75	125				S
Selenium	8.961	0.50	10.00	0.08904	88.7	75	125				

Sample ID **N014380-001E-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/22/2015** RunNo: **97729**
Client ID: **ZZZZZZ** Batch ID: **48492** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/23/2015** SeqNo: **1919614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	258.770	5.0	100.0	136.9	122	75	125				

Sample ID **N014380-001E-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/22/2015** RunNo: **97729**
Client ID: **ZZZZZZ** Batch ID: **48492** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/23/2015** SeqNo: **1919615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	257.211	5.0	100.0	136.9	120	75	125	258.8	0.604	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014402-001B-MS**	SampType:	**MS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**1/22/2015**	RunNo:	**97729**		
Client ID:	**ZZZZZZ**	Batch ID:	**48492**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/23/2015**	SeqNo:	**1919619**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic		268.325	0.50	10.00	248.9	194	75	125				S	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

1/14/2015 3:30:07 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 659054.01.03.02
Task Order
Project 2015-RMP-199
Turnaround Time 10 Days
Shipping Date: 1/14/2015
COC Number: 3

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C		
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA		
			Holding Time:	28	28	180	180	180	7	7	7	28		
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020A dis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Metals (6020A) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
C-BNS-D-199	1/14/2015	10:34	Water	X		X	X	X	X	X	X	X	N014382 -01	9	
C-I-3-D-199	1/14/2015	9:18	Water	X		X	X	X	X	X	X	X	-02	9	
C-I-3-S-199	1/14/2015	9:26	Water	X		X	X	X	X	X	X	X	-03	9	
C-MAR-S-199	1/14/2015	8:10	Water	X		X	X	X	X	X	X	X	-04	9	
C-MW-80-199	1/14/2015	8:00	Water		X								-05	1	
C-MW-81-199	1/14/2015	9:40	Water		X								-06	1	
C-R22A-D-199	1/14/2015	10:06	Water	X		X	X	X	X	X	X	X	-07	9	
C-R22A-S-199	1/14/2015	10:14	Water	X		X	X	X	X	X	X	X	-08	9	
C-R27-D-199	1/14/2015	10:52	Water	X		X	X	X	X	X	X	X	-09	9	
C-R27-S-199	1/14/2015	11:04	Water	X		X	X	X	X	X	X	X	-10	9	
C-TAZ-D-199	1/14/2015	8:44	Water	X		X	X	X	X	X	X	X	-11	9	
C-TAZ-S-199	1/14/2015	8:56	Water	X		X	X	X	X	X	X	X	-12	9	
R63-199	1/14/2015	9:45	Water	X		X	X	X	X	X	X	X	-13	9	
RMP-AB1-199	1/14/2015	11:15	Water		X								-14	1	

Signatures	Date/Time
Approved by	1-14-15
Sampled by	1533
Relinquished by	
Received by	1/14/15 1555
Relinquished by	01/14/15
Received by	18:11

Shipping Details
Method of Shipment: courier
On Ice: yes / no 2.8°C / 1.9°C
Airbill No: 14.7°C IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Jan 13-14, 2015

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

1/14/2015 3:30:08 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 659054.01.03.02
Task Order
Project 2015-RMP-199
Turnaround Time 10 Days
Shipping Date: 1/14/2015
COC Number: 3

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	7	7	7	28			
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Acids) Field Filtered As,Mn,Fe,Se,Mo,Ba	Metals (6020A) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
SW1-199	1/14/2015	12:50	Water	X				X	X	X			N014382-15	7	
SW2-199	1/14/2015	13:00	Water	X				X	X	X			-16	7	
													TOTAL NUMBER OF CONTAINERS	~~112~~ 116	

Signatures	Date/Time
Approved by	1-14-15
Sampled by	1555
Relinquished by	
Received by	1/14/15 1555
Relinquished by	1/14/15
Received by	18:11

Shipping Details
Method of Shipment: courier
On Ice: yes / no 4.7°C IR#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Jan 13-14, 2015

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/14/2015	Workorder:	N014382
Rep sample Temp (Deg C):	2.8,1.9,4.7	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☑	NA ☐

Comments: Sample for pH was pastholding time upon receipt.

Checklist Completed B JPG jpg 01/27/15

Reviewed By: jpg 01/28/15

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014382-003D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4393-1.4390)*1000000}{100}$$
$$= 3 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Silia Ramit 1/26/2015

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date: 1/19/2015	vol of sample	Wi	Wf	TSS, mg/L
MB-48458	100	1.4328	1.4329	1
LCS-48458	100	1.4299	1.515	851
N014380-001F	100	1.4309	1.4309	0
N014382-001D	100	1.4433	1.4442	9
N014382-001D DUP	100	1.439	1.4394	4
N014382-002D	100	1.4254	1.4254	0
N014382-003D	100	1.439	1.4393	3
N014382-004D	100	1.4321	1.4373	52
N014382-007D	100	1.4361	1.4363	2
N014382-008D	100	1.4248	1.425	2
N014382-009D	100	1.4368	1.4371	3
N014382-010D	100	1.4202	1.4202	0
N014382-011D	100	1.4221	1.4222	1

Julia Ramit 1/26/2015

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date: 1/19/2015	vol of sample	Wi	Wf	TSS, mg/L
MB-48459	100	1.4208	1.4208	0
LCS-48459	100	1.4265	1.5194	929
N014382-012D	100	1.4292	1.4295	3
N014382-013D	100	1.4248	1.4252	4
N014396-001D	100	1.4281	1.4284	3
N014396-001D DUP	100	1.4336	1.4339	3
N014396-002D	100	1.4247	1.4247	0
N014396-005D	100	1.4334	1.4336	2
N014396-006D	100	1.4123	1.4124	1
N014396-007D	100	1.431	1.4313	3
N014396-008D	100	1.4258	1.4259	1
N014396-009D	100	1.4343	1.4345	2
N014396-0010D	100	1.4396	1.4397	1

Silia Ramit 1/26/2015

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014382-013A,** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0664 * 1

= 0.0664

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

1/29/2015

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014382-005A,** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0586 * 1

= 0.0586

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

1/29/2015

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N014382-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.3114 * 1

= 0.3114 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.31 mg/L

1/23/2015

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014382-004C**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.022410466 * 1 * (25/25) * 1000

= 22.410466

Reporting results in two significant figures,

Iron, ug/L = 22

1/29/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014382
Test Method: EPA 6010
Analysis Date: 01/21/15

Matrix: Water
Batch No.: 48467

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014355-001A DT 5X	Iron	ug/L	10.636245	NA	7.765647	36.97%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *22-Jan-15*

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID:	**N014355-001A-PS**	SampType:	**PS**	TestCode:	**6010_WDPGE**	Units:	**ug/L**	Prep Date:			RunNo:	**97664**	
Client ID:	**ZZZZZZ**	Batch ID:	**48467**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**1/21/2015**		SeqNo:	**1915574**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	96.516	20	100.0	7.766	88.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014382-001B**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.04122135218 * 1 * (25/25) * 1000

= 41.22135218

Reporting results in two significant figures,

Iron, ug/L = 41

1/29/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014382
Test Method: EPA 6010
Analysis Date: 01/22/15

Matrix: Water
Batch No.: 48480

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014382-001B DT 5X	Iron	ug/L	50.721046	NA	41.221352	23.05%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *22-Jan-15*

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N014382-001B-PS**	SampType:	**PS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**97673**
Client ID:	**ZZZZZZ**	Batch ID:	**48480**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**1/22/2015**	SeqNo:	**1916829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	134.501	20	100.0	41.22	93.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014382-001C,** the concentration in ug/L is calculated as follows:

Barium, ug/L = 25.9218094332861 * 5 * (25/25)

= 129.609047166431

Reporting results in two significant figures,

Barium, ug/L = 130

1/29/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014382
Test Method: EPA 6020
Analysis Date: 1/19/2015

Matrix: Water
Batch No.: 48462

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mn, Mo & Se. The calculated values are <25X RL.
Dilution test failed for As. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014382-001C DT 5X	Arsenic	ug/L	2.714446071	FAIL	2.383128606	13.90%	10
N014382-001C DT ~~5X~~ 25x	Barium	ug/L	135.74564	PASS	129.6090472	4.73%	10
N014382-001C DT 5X	Manganese	ug/L	0	NA	0		10
N014382-001C DT 5X	Molybdenum	ug/L	4.724644141	NA	4.700135033	0.52%	10
N014382-001C DT 5X	Selenium	ug/L	1.380240629	NA	1.427509256	3.31%	10
N014382-001C DT 5X	Chromium	ug/L	0	NA	0.049895367	100.00%	10

Note: NA - Not applicable

Mary 1/29/2015

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014382-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.082	0.10	10.00	2.383	97.0	80	120				
Manganese	91.447	0.50	100.0	0	91.4	80	120				
Molybdenum	15.611	0.50	10.00	4.700	109	80	120				
Selenium	10.303	0.50	10.00	1.428	88.8	80	120				

Sample ID **N014382-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48462** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	235.844	5.0	100.0	129.6	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

Date: *28-Jan-15*

CLIENT: CH2M HILL
Work Order: N014382
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014382-001C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**97625**
Client ID:	**ZZZZZZ**	Batch ID:	**48462**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/20/2015**			SeqNo:	**1913437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.767	1.0	10.00	0.04990	97.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

February 02, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014396

RE: PG&E Topock, 659054.01.03.02

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 15, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: CH2M HILL
Project: PG&E Topock, 659054.01.03.02
Lab Order: N014396

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

Date: *02-Feb-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 659054.01.03.02
Lab Order: N014396
Contract No: 2015-RMP-199

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014396-001A	C-CON-D-199	Water	1/15/2015 9:42:00 AM	1/15/2015	2/2/2015
N014396-001B	C-CON-D-199	Water	1/15/2015 9:42:00 AM	1/15/2015	2/2/2015
N014396-001C	C-CON-D-199	Water	1/15/2015 9:42:00 AM	1/15/2015	2/2/2015
N014396-001D	C-CON-D-199	Water	1/15/2015 9:42:00 AM	1/15/2015	2/2/2015
N014396-001E	C-CON-D-199	Water	1/15/2015 9:42:00 AM	1/15/2015	2/2/2015
N014396-002A	C-CON-S-199	Water	1/15/2015 9:52:00 AM	1/15/2015	2/2/2015
N014396-002B	C-CON-S-199	Water	1/15/2015 9:52:00 AM	1/15/2015	2/2/2015
N014396-002C	C-CON-S-199	Water	1/15/2015 9:52:00 AM	1/15/2015	2/2/2015
N014396-002D	C-CON-S-199	Water	1/15/2015 9:52:00 AM	1/15/2015	2/2/2015
N014396-002E	C-CON-S-199	Water	1/15/2015 9:52:00 AM	1/15/2015	2/2/2015
N014396-003A	C-MW-82-199	Water	1/15/2015 8:34:00 AM	1/15/2015	2/2/2015
N014396-004A	C-MW-83-199	Water	1/15/2015 9:15:00 AM	1/15/2015	2/2/2015
N014396-005A	C-NR1-D-199	Water	1/15/2015 10:10:00 AM	1/15/2015	2/2/2015
N014396-005B	C-NR1-D-199	Water	1/15/2015 10:10:00 AM	1/15/2015	2/2/2015
N014396-005C	C-NR1-D-199	Water	1/15/2015 10:10:00 AM	1/15/2015	2/2/2015
N014396-005D	C-NR1-D-199	Water	1/15/2015 10:10:00 AM	1/15/2015	2/2/2015
N014396-005E	C-NR1-D-199	Water	1/15/2015 10:10:00 AM	1/15/2015	2/2/2015
N014396-006A	C-NR1-S-199	Water	1/15/2015 10:20:00 AM	1/15/2015	2/2/2015
N014396-006B	C-NR1-S-199	Water	1/15/2015 10:20:00 AM	1/15/2015	2/2/2015
N014396-006C	C-NR1-S-199	Water	1/15/2015 10:20:00 AM	1/15/2015	2/2/2015
N014396-006D	C-NR1-S-199	Water	1/15/2015 10:20:00 AM	1/15/2015	2/2/2015
N014396-006E	C-NR1-S-199	Water	1/15/2015 10:20:00 AM	1/15/2015	2/2/2015
N014396-007A	C-NR3-D-199	Water	1/15/2015 10:44:00 AM	1/15/2015	2/2/2015
N014396-007B	C-NR3-D-199	Water	1/15/2015 10:44:00 AM	1/15/2015	2/2/2015
N014396-007C	C-NR3-D-199	Water	1/15/2015 10:44:00 AM	1/15/2015	2/2/2015
N014396-007D	C-NR3-D-199	Water	1/15/2015 10:44:00 AM	1/15/2015	2/2/2015
N014396-007E	C-NR3-D-199	Water	1/15/2015 10:44:00 AM	1/15/2015	2/2/2015
N014396-008A	C-NR3-S-199	Water	1/15/2015 10:56:00 AM	1/15/2015	2/2/2015
N014396-008B	C-NR3-S-199	Water	1/15/2015 10:56:00 AM	1/15/2015	2/2/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock, 659054.01.03.02
Lab Order: N014396
Contract No: 2015-RMP-199

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014396-008C	C-NR3-S-199	Water	1/15/2015 10:56:00 AM	1/15/2015	2/2/2015
N014396-008D	C-NR3-S-199	Water	1/15/2015 10:56:00 AM	1/15/2015	2/2/2015
N014396-008E	C-NR3-S-199	Water	1/15/2015 10:56:00 AM	1/15/2015	2/2/2015
N014396-009A	C-NR4-D-199	Water	1/15/2015 11:20:00 AM	1/15/2015	2/2/2015
N014396-009B	C-NR4-D-199	Water	1/15/2015 11:20:00 AM	1/15/2015	2/2/2015
N014396-009C	C-NR4-D-199	Water	1/15/2015 11:20:00 AM	1/15/2015	2/2/2015
N014396-009D	C-NR4-D-199	Water	1/15/2015 11:20:00 AM	1/15/2015	2/2/2015
N014396-009E	C-NR4-D-199	Water	1/15/2015 11:20:00 AM	1/15/2015	2/2/2015
N014396-010A	C-NR4-S-199	Water	1/15/2015 11:34:00 AM	1/15/2015	2/2/2015
N014396-010B	C-NR4-S-199	Water	1/15/2015 11:34:00 AM	1/15/2015	2/2/2015
N014396-010C	C-NR4-S-199	Water	1/15/2015 11:34:00 AM	1/15/2015	2/2/2015
N014396-010D	C-NR4-S-199	Water	1/15/2015 11:34:00 AM	1/15/2015	2/2/2015
N014396-010E	C-NR4-S-199	Water	1/15/2015 11:34:00 AM	1/15/2015	2/2/2015
N014396-011A	R-19-199	Water	1/15/2015 9:04:00 AM	1/15/2015	2/2/2015
N014396-011B	R-19-199	Water	1/15/2015 9:04:00 AM	1/15/2015	2/2/2015
N014396-011C	R-19-199	Water	1/15/2015 9:04:00 AM	1/15/2015	2/2/2015
N014396-011D	R-19-199	Water	1/15/2015 9:04:00 AM	1/15/2015	2/2/2015
N014396-011E	R-19-199	Water	1/15/2015 9:04:00 AM	1/15/2015	2/2/2015
N014396-012A	R-28-199	Water	1/15/2015 8:42:00 AM	1/15/2015	2/2/2015
N014396-012B	R-28-199	Water	1/15/2015 8:42:00 AM	1/15/2015	2/2/2015
N014396-012C	R-28-199	Water	1/15/2015 8:42:00 AM	1/15/2015	2/2/2015
N014396-012D	R-28-199	Water	1/15/2015 8:42:00 AM	1/15/2015	2/2/2015
N014396-012E	R-28-199	Water	1/15/2015 8:42:00 AM	1/15/2015	2/2/2015
N014396-013A	RMP-AB2-199	Water	1/15/2015 11:45:00 AM	1/15/2015	2/2/2015
N014396-014A	RRB-199	Water	1/15/2015 9:20:00 AM	1/15/2015	2/2/2015
N014396-014B	RRB-199	Water	1/15/2015 9:20:00 AM	1/15/2015	2/2/2015
N014396-014C	RRB-199	Water	1/15/2015 9:20:00 AM	1/15/2015	2/2/2015
N014396-014D	RRB-199	Water	1/15/2015 9:20:00 AM	1/15/2015	2/2/2015
N014396-014E	RRB-199	Water	1/15/2015 9:20:00 AM	1/15/2015	2/2/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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P: 562.219.7435 F: 562.219.7436
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"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150116B** QC Batch: **R97569** PrepDate Analyst: **RB**							
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:52:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:10:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:44:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:56:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:34:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:04:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 8:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150116B**	QC Batch: **R97569**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/16/2015 04:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014396-001D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97569**
Client ID: **ZZZZZZ** Batch ID: **R97569** TestNo: **EPA 120.1** Analysis Date: **1/16/2015** SeqNo: **1912758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	945.000	0.10						946.0	0.106	10	

Sample ID **N014396-011D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97569**
Client ID: **ZZZZZZ** Batch ID: **R97569** TestNo: **EPA 120.1** Analysis Date: **1/16/2015** SeqNo: **1912767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	934.000	0.10						935.0	0.107	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:52:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:10:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:44:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:56:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT: CH2M HILL
Lab Order: N014396
Project: PG&E Topock, 659054.01.03.02
Lab ID: N014396-010

Client Sample ID: C-NR4-S-199
Collection Date: 1/15/2015 11:34:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **WETCHEM_150116C** QC Batch: **R97643** PrepDate Analyst: **RB**							
pH	8.2	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:04:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 8:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150116C**	QC Batch: **R97643**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/16/2015
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N014396-001D-DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **97643**
Client ID: **ZZZZZZ** Batch ID: **R97643** TestNo: **SM4500-H+B** Analysis Date: **1/16/2015** SeqNo: **1914957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.250	0.10						8.220	0.364	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N014396-014D-DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **97643**
Client ID: **ZZZZZZ** Batch ID: **R97643** TestNo: **SM4500-H+B** Analysis Date: **1/16/2015** SeqNo: **1914968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.300	0.10						8.300	0	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**			PrepDate	**1/19/2015**		Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:52:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:10:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:44:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:56:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:34:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119H**	QC Batch: **48459**			PrepDate	**1/19/2015**		Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:04:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119E**	QC Batch: **48460**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 8:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119E**	QC Batch: **48460**			PrepDate	**1/19/2015**		Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150119E**	QC Batch: **48460**				PrepDate	**1/19/2015**	Analyst: **RB**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/19/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **MB-48459** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/19/2015** RunNo: **97704**
Client ID: **PBW** Batch ID: **48459** TestNo: **SM2540D** Analysis Date: **1/19/2015** SeqNo: **1918482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **LCS-48459** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/19/2015** RunNo: **97704**
Client ID: **LCSW** Batch ID: **48459** TestNo: **SM2540D** Analysis Date: **1/19/2015** SeqNo: **1918483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	929.000	10	1000	0	92.9	80	120				

Sample ID **N014396-001DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/19/2015** RunNo: **97704**
Client ID: **ZZZZZZ** Batch ID: **48459** TestNo: **SM2540D** Analysis Date: **1/19/2015** SeqNo: **1918487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-48460	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97654
Client ID:	PBW	Batch ID:	48460	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1915166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-48460	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97654
Client ID:	LCSW	Batch ID:	48460	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1915167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	923.000	10	1000	0	92.3	80	120				

Sample ID	N014406-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/19/2015	RunNo:	97654
Client ID:	ZZZZZZ	Batch ID:	48460	TestNo:	SM2540D			Analysis Date:	1/19/2015	SeqNo:	1915172

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119A** QC Batch: **R97620** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 04:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 01:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:52:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119A** QC Batch: **R97620** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 04:35 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 01:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-82-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 8:34:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 05:17 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-83-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:15:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119A**	QC Batch: **R97620**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 05:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:10:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B** QC Batch: **R97621** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 06:29 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 02:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B** QC Batch: **R97621** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 07:29 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 02:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:44:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B** QC Batch: **R97621** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 07:49 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 02:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:56:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B** QC Batch: **R97621** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 08:09 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 02:51 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B** QC Batch: **R97621** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 08:29 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 03:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:34:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B** QC Batch: **R97621** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 09:09 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 03:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:04:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150119B**	QC Batch: **R97621**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 09:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate		**1/19/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 03:23 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 8:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B** QC Batch: **R97621** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 09:48 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 03:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB2-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:45:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B**	QC Batch: **R97621**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 10:08 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150119B** QC Batch: **R97621** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	1/19/2015 10:28 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150119B** QC Batch: **48463** PrepDate **1/19/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	1/20/2015 03:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R97620** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **PBW** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97620** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **LCSW** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.976	0.20	5.000	0	99.5	90	110				

Sample ID **N014382-001A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.063	0.20						0.05530	0	20	

Sample ID **N014382-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.05530	101	90	110				

Sample ID **N014382-001A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.05530	106	90	110	1.069	4.66	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014382-002A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0.05600	103	90	110				

Sample ID **N014382-003A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.06550	100	90	110				

Sample ID **N014382-004A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.109	0.20	1.000	0.06980	104	90	110				

Sample ID **N014382-007A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.06660	102	90	110				

Sample ID **N014382-008A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.06800	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014382-009A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0.06250	100	90	110				

Sample ID **N014382-010A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.106	0.20	1.000	0.05370	105	90	110				

Sample ID **N014382-011A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.125	0.20	1.000	0.07140	105	90	110				

Sample ID **N014382-012A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.138	0.20	1.000	0.05250	109	90	110				

Sample ID **N014382-013A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.115	0.20	1.000	0.06640	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014382-015A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.184	0.20	1.000	0.1234	106	90	110				

Sample ID **N014382-016A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.1062	101	90	110				

Sample ID **N014396-001A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0.06850	98.4	90	110				

Sample ID **N014396-002A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0.05000	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **MB-R97621** SampType: **MBLK** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **PBW** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97621** SampType: **LCS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **LCSW** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.061	0.20	5.000	0	101	90	110				

Sample ID **N014396-005A-DUP** SampType: **DUP** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.057	0.20						0.05410	0	20	

Sample ID **N014396-005A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0.05410	103	90	110				

Sample ID **N014396-005A-MSD** SampType: **MSD** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0.05410	104	90	110	1.082	0.783	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014396-006A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.045	0.20	1.000	0.06200	98.3	90	110				

Sample ID **N014396-007A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.06320	102	90	110				

Sample ID **N014396-008A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0.05440	102	90	110				

Sample ID **N014396-009A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.138	0.20	1.000	0.06240	108	90	110				

Sample ID **N014396-010A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.108	0.20	1.000	0.06610	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WPGE

Sample ID **N014396-011A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0.06210	100	90	110				

Sample ID **N014396-012A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.099	0.20	1.000	0.05930	104	90	110				

Sample ID **N014396-014A-MS** SampType: **MS** TestCode: **218.6R_WPG** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.113	0.20	1.000	0.07360	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **MB-R97620** SampType: **MBLK** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **PBW** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97620** SampType: **LCS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **LCSW** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.976	0.20	5.000	0	99.5	90	110				

Sample ID **N014382-001A-DUP** SampType: **DUP** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.063	0.20						0.05530	0	20	

Sample ID **N014382-001A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.05530	101	90	110				

Sample ID **N014382-001A-MSD** SampType: **MSD** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.05530	106	90	110	1.069	4.66	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **N014382-005A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0.05860	102	90	110				

Sample ID **N014382-006A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1912994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0.07650	96.9	90	110				

Sample ID **N014382-014A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0.05970	101	90	110				

Sample ID **N014396-003A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.047	0.20	1.000	0.05560	99.2	90	110				

Sample ID **N014396-004A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97620**
Client ID: **ZZZZZZ** Batch ID: **R97620** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.07820	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID **MB-R97621** SampType: **MBLK** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **PBW** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97621** SampType: **LCS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **LCSW** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.061	0.20	5.000	0	101	90	110				

Sample ID **N014396-005A-DUP** SampType: **DUP** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.057	0.20						0.05410	0	20	

Sample ID **N014396-005A-MS** SampType: **MS** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0.05410	103	90	110				

Sample ID **N014396-005A-MSD** SampType: **MSD** TestCode: **218.6R_WUP** Units: **µg/L** Prep Date: RunNo: **97621**
Client ID: **ZZZZZZ** Batch ID: **R97621** TestNo: **EPA 218.6** Analysis Date: **1/19/2015** SeqNo: **1913105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0.05410	104	90	110	1.082	0.783	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6R_WUPGE

Sample ID	**N014396-013A-MS**	SampType:	**MS**	TestCode:	**218.6R_WUP**	Units:	**µg/L**	Prep Date:			RunNo:	**97621**	
Client ID:	**ZZZZZZ**	Batch ID:	**R97621**	TestNo:	**EPA 218.6**			Analysis Date:	**1/19/2015**		SeqNo:	**1913123**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.114	0.20	1.000	0.08140	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-48463** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **PBW** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1913451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-48463** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **LCSW** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1913452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.388	1.0	10.00	0	104	85	115				

Sample ID **N014396-001C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1913493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.680	1.0	10.00	0.05995	96.2	75	125				

Sample ID **N014396-001C-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1913495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.560	1.0	10.00	0.05995	95.0	75	125	9.680	1.25	20	

Sample ID **N014396-014C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1913499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.843	1.0	10.00	0.05826	97.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150122C**	QC Batch: **R97687**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:52:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:10:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:44:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:56:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:34:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:04:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 8:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150122C** QC Batch: **R97687** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	1/22/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *02-Feb-15*

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R97687** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97687**
Client ID: **PBW** Batch ID: **R97687** TestNo: **SM4500-NO3** Analysis Date: **1/22/2015** SeqNo: **1917234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R97687** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97687**
Client ID: **LCSW** Batch ID: **R97687** TestNo: **SM4500-NO3** Analysis Date: **1/22/2015** SeqNo: **1917235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.060	0.050	1.000	0	106	85	115				

Sample ID **N014396-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97687**
Client ID: **ZZZZZZ** Batch ID: **R97687** TestNo: **SM4500-NO3** Analysis Date: **1/22/2015** SeqNo: **1917237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.349	0.050						0.3538	1.37	20	

Sample ID **N014396-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97687**
Client ID: **ZZZZZZ** Batch ID: **R97687** TestNo: **SM4500-NO3** Analysis Date: **1/22/2015** SeqNo: **1917238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.404	0.050	1.000	0.3538	105	75	125				

Sample ID **N014396-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **97687**
Client ID: **ZZZZZZ** Batch ID: **R97687** TestNo: **SM4500-NO3** Analysis Date: **1/22/2015** SeqNo: **1917239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.469	0.050	1.000	0.3538	112	75	125	1.404	4.52	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 03:57 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	47	1.3	20		ug/L	1	1/22/2015 12:23 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:52:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 04:49 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	27	1.3	20		ug/L	1	1/22/2015 12:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:10:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 04:53 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	47	1.3	20		ug/L	1	1/22/2015 12:55 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 04:44 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	25	1.3	20		ug/L	1	1/22/2015 12:59 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:44:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 05:43 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	35	1.3	20		ug/L	1	1/22/2015 01:03 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:56:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 05:02 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	28	1.3	20		ug/L	1	1/22/2015 01:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 05:06 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	36	1.3	20		ug/L	1	1/22/2015 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:34:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 05:10 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/22/2015 01:42 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:04:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	26	1.3	20		ug/L	1	1/21/2015 05:15 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	24	1.3	20		ug/L	1	1/22/2015 01:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 8:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 05:19 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	20	1.3	20		ug/L	1	1/22/2015 01:51 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150121A**	QC Batch: **48468**				PrepDate	**1/20/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	1/21/2015 05:23 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_150122A**	QC Batch: **48481**				PrepDate	**1/21/2015**	Analyst: **CEI**
Iron	23	1.3	20		ug/L	1	1/22/2015 01:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-48468** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/20/2015** RunNo: **97664**
Client ID: **PBW** Batch ID: **48468** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/21/2015** SeqNo: **1915607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-48468** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/20/2015** RunNo: **97664**
Client ID: **LCSW** Batch ID: **48468** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/21/2015** SeqNo: **1915608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	97.938	20	100.0	0	97.9	85	115				

Sample ID **N014396-001C-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/20/2015** RunNo: **97664**
Client ID: **ZZZZZZ** Batch ID: **48468** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/21/2015** SeqNo: **1915612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.484	20	100.0	0	98.5	75	125				

Sample ID **N014396-001C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/20/2015** RunNo: **97664**
Client ID: **ZZZZZZ** Batch ID: **48468** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/21/2015** SeqNo: **1915613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	97.672	20	100.0	0	97.7	75	125	98.48	0.829	20	

Sample ID **N014396-014C-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/20/2015** RunNo: **97664**
Client ID: **ZZZZZZ** Batch ID: **48468** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/21/2015** SeqNo: **1915630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	94.429	20	100.0	0	94.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-48481	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/21/2015	RunNo:	97673
Client ID:	PBW	Batch ID:	48481	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916845

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-48481	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/21/2015	RunNo:	97673
Client ID:	LCSW	Batch ID:	48481	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916846

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	100.974	20	100.0	0	101	85	115				

Sample ID	N014396-001B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/21/2015	RunNo:	97673
Client ID:	ZZZZZZ	Batch ID:	48481	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916852

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	125.255	20	100.0	46.93	78.3	75	125				

Sample ID	N014396-014B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/21/2015	RunNo:	97673
Client ID:	ZZZZZZ	Batch ID:	48481	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	122.856	20	100.0	23.32	99.5	75	125				

Sample ID	N014396-001B-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/21/2015	RunNo:	97673
Client ID:	ZZZZZZ	Batch ID:	48481	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/22/2015	SeqNo:	1916870

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	131.592	20	100.0	46.93	84.7	75	125	125.3	4.93	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	1/20/2015 01:44 AM
Barium	140	0.15	5.0		µg/L	5	1/20/2015 01:50 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 01:44 AM
Molybdenum	4.8	0.15	0.50		µg/L	1	1/20/2015 01:44 AM
Selenium	1.4	0.069	0.50		µg/L	1	1/20/2015 01:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:52:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	1/20/2015 01:55 AM
Barium	120	0.030	1.0		µg/L	1	1/20/2015 01:55 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 01:55 AM
Molybdenum	4.4	0.15	0.50		µg/L	1	1/20/2015 01:55 AM
Selenium	1.3	0.069	0.50		µg/L	1	1/20/2015 01:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:10:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	1/20/2015 02:06 AM
Barium	130	0.030	1.0		µg/L	1	1/20/2015 02:06 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 02:06 AM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/20/2015 02:06 AM
Selenium	1.3	0.069	0.50		µg/L	1	1/20/2015 02:06 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	1/20/2015 02:17 AM
Barium	130	0.030	1.0		µg/L	1	1/20/2015 02:17 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 02:17 AM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/20/2015 02:17 AM
Selenium	1.3	0.069	0.50		µg/L	1	1/20/2015 02:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:44:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	1/20/2015 02:39 AM
Barium	120	0.030	1.0		µg/L	1	1/20/2015 02:39 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 02:39 AM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/20/2015 02:39 AM
Selenium	1.3	0.069	0.50		µg/L	1	1/20/2015 02:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 10:56:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	1/20/2015 02:51 AM
Barium	120	0.030	1.0		µg/L	1	1/20/2015 02:51 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 02:51 AM
Molybdenum	4.5	0.15	0.50		µg/L	1	1/20/2015 02:51 AM
Selenium	1.5	0.069	0.50		µg/L	1	1/20/2015 02:51 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	1/20/2015 03:02 AM
Barium	130	0.030	1.0		µg/L	1	1/20/2015 03:02 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 03:02 AM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/20/2015 03:02 AM
Selenium	1.4	0.069	0.50		µg/L	1	1/20/2015 03:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 11:34:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	1/20/2015 03:13 AM
Barium	120	0.030	1.0		µg/L	1	1/20/2015 03:13 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 03:13 AM
Molybdenum	4.4	0.15	0.50		µg/L	1	1/20/2015 03:13 AM
Selenium	1.3	0.069	0.50		µg/L	1	1/20/2015 03:13 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:04:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.7	0.027	0.10		µg/L	1	1/20/2015 03:23 AM
Barium	130	0.030	1.0		µg/L	1	1/20/2015 03:23 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 03:23 AM
Molybdenum	4.8	0.15	0.50		µg/L	1	1/20/2015 03:23 AM
Selenium	1.5	0.069	0.50		µg/L	1	1/20/2015 03:23 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 8:42:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**			PrepDate	**1/19/2015**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	1/20/2015 03:46 AM
Barium	130	0.030	1.0		µg/L	1	1/20/2015 03:46 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 03:46 AM
Molybdenum	4.7	0.15	0.50		µg/L	1	1/20/2015 03:46 AM
Selenium	1.3	0.069	0.50		µg/L	1	2/2/2015 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *02-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-199
Lab Order:	N014396	**Collection Date:**	1/15/2015 9:20:00 AM
Project:	PG&E Topock, 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014396-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150119B**	QC Batch: **48463**				PrepDate	**1/19/2015**	Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	1/20/2015 03:55 AM
Barium	130	0.15	5.0		µg/L	5	1/20/2015 04:01 AM
Manganese	ND	0.026	0.50		µg/L	1	1/20/2015 03:55 AM
Molybdenum	4.6	0.15	0.50		µg/L	1	1/20/2015 03:55 AM
Selenium	1.3	0.069	0.50		µg/L	1	1/20/2015 03:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *02-Feb-15*

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-48463** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **PBW** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-48463** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **LCSW** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.245	0.10	10.00	0	102	85	115				
Barium	110.781	1.0	100.0	0	111	85	115				
Manganese	104.151	0.50	100.0	0	104	85	115				
Molybdenum	10.132	0.50	10.00	0	101	85	115				
Selenium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID **N014396-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.872	0.10	10.00	2.572	93.0	75	125				
Manganese	90.129	0.50	100.0	0	90.1	75	125				
Molybdenum	14.799	0.50	10.00	4.778	100	75	125				
Selenium	9.840	0.50	10.00	1.414	84.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014396-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	233.348	5.0	100.0	135.2	98.1	75	125				

Sample ID **N014396-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.879	0.10	10.00	2.572	93.1	75	125	11.87	0.0565	20	
Manganese	89.745	0.50	100.0	0	89.7	75	125	90.13	0.426	20	
Molybdenum	14.980	0.50	10.00	4.778	102	75	125	14.80	1.22	20	
Selenium	10.251	0.50	10.00	1.414	88.4	75	125	9.840	4.09	20	

Sample ID **N014396-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	233.643	5.0	100.0	135.2	98.4	75	125	233.3	0.126	20	

Sample ID **N014396-014C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/19/2015** RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.198	0.10	10.00	2.509	96.9	75	125				
Manganese	92.531	0.50	100.0	0	92.5	75	125				
Molybdenum	15.680	0.50	10.00	4.644	110	75	125				
Selenium	10.533	0.50	10.00	1.283	92.5	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014396-014C-MS**	SampType:	**MS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**1/19/2015**	RunNo:	**97625**		
Client ID:	**ZZZZZZ**	Batch ID:	**48463**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/20/2015**	SeqNo:	**1914839**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	246.555	5.0	100.0	134.4	112	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

1/15/2015 2:18:33 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 659054.01.03.02
Task Order
Project 2015-RMP-199
Turnaround Time 10 Days
Shipping Date:
COC Number: RMP-199

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	7	1 BC	7	28			
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Metals (6020A) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
C-CON-D-199	1/15/2015	9:42	Water	X		X	X	X	X	X	X	X	N014396-01	9	
C-CON-S-199	1/15/2015	9:52	Water	X		X	X	X	X	X	X	X	-02	9	
C-MW-82-199	1/15/2015	8:34	Water		X								-03	1	
C-MW-83-199	1/15/2015	9:15	Water		X								-04	1	
C-NR1-D-199	1/15/2015	10:10	Water	X		X	X	X	X	X	X	X	-05	9	
C-NR1-S-199	1/15/2015	10:20	Water	X		X	X	X	X	X	X	X	-06	9	
C-NR3-D-199	1/15/2015	10:44	Water	X		X	X	X	X	X	X	X	-07	9	
C-NR3-S-199	1/15/2015	10:56	Water	X		X	X	X	X	X	X	X	-08	9	
C-NR4-D-199	1/15/2015	11:20	Water	X		X	X	X	X	X	X	X	-09	9	
C-NR4-S-199	1/15/2015	11:34	Water	X		X	X	X	X	X	X	X	-10	9	
R-19-199	1/15/2015	9:04	Water	X		X	X	X	X	X	X	X	-11	9	
R-28-199	1/15/2015	8:42	Water	X		X	X	X	X	X	X	X	-12	9	
RMP-AB2-199	1/15/2015	11:45	Water		X								-13	1	
RRB-199	1/15/2015	9:20	Water	X		X	X	X	X	X	X	X	-14	9	

* Where provided w/multiple Cr6 + CrT bottles, please analyze 1 + hold the others.

total 102 BC

Signatures	Date/Time
Approved by	1-15-15
Sampled by	1620
Relinquished by	
Received by	1/15/15 @1021
Relinquished by	1/15/15 @1820
Received by	1/15/15 1820

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 2.8, 2.4, 3.5
Airbill No: 1Rtt 1a
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
Jan 13-14, 2015

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/15/2015	Workorder:	N014396
Rep sample Temp (Deg C):	2.8/2.4/3.5	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	☑
3. Custody seals intact on sample bottles?	☐	☐	☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☐	☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments: Sample for pH is past holding time upon receipt.

Checklist Completed B JPG jpg 01/21/15

Reviewed By: jpg 01/26/15

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014396-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4284-1.4281)*1000000}{100}$$
$$= 3 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Silia Ramit 1/26/2015

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) X 1000000 / C

WHERE:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date: 1/19/2015	vol of sample	Wi	Wf	TSS, mg/L
MB-48459	100	1.4208	1.4208	0
LCS-48459	100	1.4265	1.5194	929
N014382-012D	100	1.4292	1.4295	3
N014382-013D	100	1.4248	1.4252	4
N014396-001D	100	1.4281	1.4284	3
N014396-001D DUP	100	1.4336	1.4339	3
N014396-002D	100	1.4247	1.4247	0
N014396-005D	100	1.4334	1.4336	2
N014396-006D	100	1.4123	1.4124	1
N014396-007D	100	1.431	1.4313	3
N014396-008D	100	1.4258	1.4259	1
N014396-009D	100	1.4343	1.4345	2
N014396-0010D	100	1.4396	1.4397	1
Date: 1/19/2015	vol of sample	Wi	Wf	TSS, mg/L
MB-48460	100	1.4352	1.4352	0
LCS-48460	100	1.422	1.5143	923
N014396-011D	100	1.4327	1.4328	1
N014396-012D	100	1.4311	1.4313	2
N014396-014D	100	1.4354	1.4353	-1
N014406-001D	100	1.4297	1.4297	0

Silia Ramit 1/26/2015

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014396-001A,** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0685 * 1

= 0.0685

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

Nancy 1/30/2015

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014396-004A,** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0782 * 1

= 0.0782

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

1/30/2015

SAMPLE CALCULATION

METHOD: SM 4500_NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction Method
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

Where:

A= mg/L, Nitrate/Nitrite-N instrument calculated concentration

DF= dilution factor

For **N014396-001E,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.3538 * 1

= 0.3538 mg/L

Reporting result in 2 significant figures,

Nitrate/Nitrite-N, mg/L = 0.35

1/23/2015

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014396-011C**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.025956084 * 1 * (25/25) * 1000

= 25.956084

Reporting results in two significant figures,

Iron, ug/L = 26

1/28/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014396
Test Method: EPA 6010
Analysis Date: 01/21/15

Matrix: Water
Batch No.: 48468

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014396-001C DT 5X	Iron	ug/L	0	NA	0		10

Note: NA - Not Applicable

ASSET Laboratories

Date: *22-Jan-15*

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID:	**N014396-001C-PS**	SampType:	**PS**	TestCode:	**6010_WDPGE**	Units:	**ug/L**	Prep Date:				RunNo:	**97664**
Client ID:	**ZZZZZZ**	Batch ID:	**48468**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**1/21/2015**			SeqNo:	**1915611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.221	20	100.0	0	98.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014396-001B**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.04693177163 * 1 * (25/25) * 1000

= 46.93177163

Reporting results in two significant figures,

Iron, ug/L = 47

1/29/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014396
Test Method: EPA 6010
Analysis Date: 01/22/15

Matrix: Water
Batch No.: 48481

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014396-001B DT 5X	Iron	ug/L	65.551723	NA	46.931772	39.67%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *22-Jan-15*

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N014396-001B-PS**	SampType:	**PS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**97673**
Client ID:	**ZZZZZZ**	Batch ID:	**48481**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**1/22/2015**	SeqNo:	**1916851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	130.376	20	100.0	46.93	83.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014396-014C,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 2.50862224806582 * 1 * (25/25)

= 2.50862224806582

Reporting results in two significant figures,

Arsenic, ug/L = 2.5

2/2/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014396
Test Method: EPA 6020
Analysis Date: 1/19/2015

Matrix: Water
Batch No.: 48463

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mn, Mo & Se. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014396-001C DT 5X	Arsenic	ug/L	2.751663869	PASS	2.572373377	6.97%	10
N014396-001C DT 25X	Barium	ug/L	143.0720792	PASS	135.2192376	5.81%	10
N014396-001C DT 5X	Manganese	ug/L	0	NA	0		10
N014396-001C DT 5X	Molybdenum	ug/L	4.499326823	NA	4.777849316	5.83%	10
N014396-001C DT 5X	Selenium	ug/L	1.393568097	NA	1.414339263	1.47%	10
N014396-001C DT 5X	Chromium	ug/L	0	NA	0.059952635	100.00%	11

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014396-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.362	0.10	10.00	2.572	97.9	80	120				
Manganese	90.998	0.50	100.0	0	91.0	80	120				
Molybdenum	15.715	0.50	10.00	4.778	109	80	120				
Selenium	10.616	0.50	10.00	1.414	92.0	80	120				

Sample ID **N014396-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **97625**
Client ID: **ZZZZZZ** Batch ID: **48463** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/20/2015** SeqNo: **1914831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	238.897	5.0	100.0	135.2	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014396
Project: PG&E Topock, 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014396-001C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**97625**	
Client ID:	**ZZZZZZ**	Batch ID:	**48463**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/20/2015**		SeqNo:	**1913491**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.806	1.0	10.00	0.05995	97.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

February 23, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP 2676
NV Cert. No.: NV-00922

Workorder No.: N014574

RE: PG&E Topock IM3Plant-EW,

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 03, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las

CLIENT: CH2M HILL
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0P
Lab Order: N014574

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time..

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3.8 ug/L) and hexavalent chromium (4.7 ug/L) for sample N014574-001D (PE-01-227) are discrepant, Matrix Spike protocol was performed and the spike recovery is within criteria.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014575-002C-MS and N014575-002C-MSD are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014574-002A-MS and N014574-002A-MSD are outside recovery criteria for Sodium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (3.8 ug/L) and hexavalent chromium (4.7 ug/L) for sample N014574-001 (PE-01-227) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.528 and 3.934 ug/L, respectively. Since these data

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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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confirmed the original result for total dissolved chromium, the original result is reported.

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ASSET Laboratories

Date: *21-Feb-15*

CLIENT: CH2M HILL
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0P
Lab Order: N014574
Contract No: IM3Plant-EW-22

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014574-001A	PE-01-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-001B	PE-01-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-001C	PE-01-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-001D	PE-01-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-001E	PE-01-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-002A	TW-03D-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-002B	TW-03D-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-002C	TW-03D-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-002D	TW-03D-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015
N014574-002E	TW-03D-227	Groundwater	2/3/2015 1:00:00 PM	2/3/2015	2/23/2015

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150204B** QC Batch: **R97873** PrepDate Analyst: **LR**							
Specific Conductance	3900	0.10	0.10		umhos/cm	1	2/4/2015 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150204B**	QC Batch: **R97873**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	2/4/2015 11:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *21-Feb-15*

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014575-001B DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **97873**
Client ID: **ZZZZZZ** Batch ID: **R97873** TestNo: **EPA 120.1** Analysis Date: **2/4/2015** SeqNo: **1926327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6670.000	0.10						6680	0.150	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **WETCHEM_150204A** QC Batch: **R97869** PrepDate Analyst: **LR**							
pH	7.7	0.10	0.10	H	pH Units	1	2/4/2015 12:30 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/4/2015 12:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150204A** QC Batch: **R97869**			PrepDate				Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	2/4/2015 12:30 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/4/2015 12:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: *21-Feb-15*

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N014574-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **97869**
Client ID: **ZZZZZZ** Batch ID: **R97869** TestNo: **SM4500-H+B** Analysis Date: **2/4/2015** SeqNo: **1926298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.700	0.10						7.690	0.130	10	H
Temp. at time of pH Analysis	18.900	0.10						18.90	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150204E**	QC Batch: **48609**				PrepDate	**2/4/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2500	25	25		mg/L	1	2/4/2015 01:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150204E**	QC Batch: **48609**				PrepDate	**2/4/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	2/4/2015 01:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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Date: *21-Feb-15*

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **N014574-002D DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/4/2015** RunNo: **97892**
Client ID: **ZZZZZZ** Batch ID: **48609** TestNo: **SM2540C** Analysis Date: **2/4/2015** SeqNo: **1927005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4905.000	50						4775	2.69	5	

Sample ID **MB-48609** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/4/2015** RunNo: **97892**
Client ID: **PBW** Batch ID: **48609** TestNo: **SM2540C** Analysis Date: **2/4/2015** SeqNo: **1927006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-48609** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/4/2015** RunNo: **97892**
Client ID: **LCSW** Batch ID: **48609** TestNo: **SM2540C** Analysis Date: **2/4/2015** SeqNo: **1927007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	969.000	10	1000	0	96.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150218A**	QC Batch: **49657**			PrepDate	**2/10/2015**		Analyst: **CEI**
Calcium	98000	58	500		µg/L	1	2/18/2015 10:45 AM
Iron	ND	1.3	20		µg/L	1	2/18/2015 10:45 AM
Magnesium	24000	11	100		µg/L	1	2/18/2015 10:45 AM
Sodium	810000	3800	50000		µg/L	100	2/17/2015 09:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150218A**	QC Batch: **49657**			PrepDate	**2/10/2015**		Analyst: **CEI**
Calcium	210000	58	500		µg/L	1	2/18/2015 10:49 AM
Iron	ND	1.3	20		µg/L	1	2/18/2015 10:49 AM
Magnesium	37000	11	100		µg/L	1	2/18/2015 10:49 AM
Sodium	1600000	3800	50000		µg/L	100	2/17/2015 09:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: *21-Feb-15*

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-49657** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **98052**
Client ID: **PBW** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/17/2015** SeqNo: **1935436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-49657** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **98052**
Client ID: **LCSW** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/17/2015** SeqNo: **1935437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	21093.123	500	20000	0	105	85	115				

Sample ID **N014574-002A-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **98052**
Client ID: **ZZZZZZ** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/17/2015** SeqNo: **1935444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1636918.495	50000	20000	1577000	297	75	125				S

Sample ID **N014574-002A-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **98052**
Client ID: **ZZZZZZ** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/17/2015** SeqNo: **1935445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1631199.836	50000	20000	1577000	269	75	125	1637000	0.350	20	S

Sample ID **MB-49657** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **98075**
Client ID: **PBW** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/18/2015** SeqNo: **1936904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	2.137	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-49657** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **98075**
Client ID: **LCSW** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/18/2015** SeqNo: **1936905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10127.182	500	10000	0	101	85	115				
Iron	106.807	20	100.0	0	107	85	115				
Magnesium	10651.536	100	10000	0	107	85	115				

Sample ID **N014575-002C-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **98075**
Client ID: **ZZZZZZ** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/18/2015** SeqNo: **1936912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	197892.000	500	10000	183700	142	75	125				S
Iron	112.110	20	100.0	0	112	75	125				
Magnesium	45004.298	100	10000	32810	122	75	125				

Sample ID **N014575-002C-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **98075**
Client ID: **ZZZZZZ** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/18/2015** SeqNo: **1936913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	193145.282	500	10000	183700	94.1	75	125	197900	2.43	20	
Iron	111.663	20	100.0	0	112	75	125	112.1	0.400	20	
Magnesium	45482.847	100	10000	32810	127	75	125	45000	1.06	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150210B** QC Batch: **49656** PrepDate **2/10/2015** Analyst: **CEI**							
Manganese	36	0.026	0.50		µg/L	1	2/10/2015 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150210B** QC Batch: **49656** PrepDate **2/10/2015** Analyst: **CEI**							
Manganese	ND	0.026	0.50		µg/L	1	2/10/2015 05:39 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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Date: *21-Feb-15*

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-49656** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **97952**
Client ID: **PBW** Batch ID: **49656** TestNo: **EPA 200.8** Analysis Date: **2/10/2015** SeqNo: **1930284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-49656** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **97952**
Client ID: **LCSW** Batch ID: **49656** TestNo: **EPA 200.8** Analysis Date: **2/10/2015** SeqNo: **1930285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	102.966	0.50	100.0	0	103	85	115				

Sample ID **N014574-001A-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **97952**
Client ID: **ZZZZZZ** Batch ID: **49656** TestNo: **EPA 200.8** Analysis Date: **2/10/2015** SeqNo: **1930289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	129.097	0.50	100.0	36.34	92.8	75	125				

Sample ID **N014574-001A-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **97952**
Client ID: **ZZZZZZ** Batch ID: **49656** TestNo: **EPA 200.8** Analysis Date: **2/10/2015** SeqNo: **1930292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	128.412	0.50	100.0	36.34	92.1	75	125	129.1	0.532	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150204A** QC Batch: **R97877**				PrepDate			Analyst: **RB**
Hexavalent Chromium	4.7	0.016	0.20		µg/L	1	2/4/2015 05:37 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_150210B** QC Batch: **49656**				PrepDate		**2/10/2015**	Analyst: **CEI**
Chromium	3.8	0.030	1.0		µg/L	1	2/10/2015 05:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
SM 3500-CR B							
RunID: **WETCHEM_150213C** QC Batch: **R98000** PrepDate Analyst: **QBM**							
Chromium, Hexavalent	790	2.8	20		µg/L	2	2/13/2015
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **ICP7_150211A** QC Batch: **49656** PrepDate **2/10/2015** Analyst: **CEI**							
Chromium	760	0.15	5.0		µg/L	5	2/11/2015 02:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *21-Feb-15*

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-49656** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **97952**
Client ID: **PBW** Batch ID: **49656** TestNo: **EPA 200.8** Analysis Date: **2/10/2015** SeqNo: **1930213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-49656** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **97952**
Client ID: **LCSW** Batch ID: **49656** TestNo: **EPA 200.8** Analysis Date: **2/10/2015** SeqNo: **1930214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.970	1.0	10.00	0	99.7	85	115				

Sample ID **N014574-001A-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **97952**
Client ID: **ZZZZZZ** Batch ID: **49656** TestNo: **EPA 200.8** Analysis Date: **2/10/2015** SeqNo: **1930218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.934	1.0	10.00	3.774	91.6	75	125				

Sample ID **N014574-001A-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2015** RunNo: **97952**
Client ID: **ZZZZZZ** Batch ID: **49656** TestNo: **EPA 200.8** Analysis Date: **2/10/2015** SeqNo: **1930221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.849	1.0	10.00	3.774	90.7	75	125	12.93	0.664	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R97877** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97877**
Client ID: **PBW** Batch ID: **R97877** TestNo: **EPA 218.6** Analysis Date: **2/4/2015** SeqNo: **1926432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R97877** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97877**
Client ID: **LCSW** Batch ID: **R97877** TestNo: **EPA 218.6** Analysis Date: **2/4/2015** SeqNo: **1926433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.074	0.20	5.000	0	101	90	110				

Sample ID **N014572-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97877**
Client ID: **ZZZZZZ** Batch ID: **R97877** TestNo: **EPA 218.6** Analysis Date: **2/4/2015** SeqNo: **1926435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.798	0.20						1.742	3.19	20	

Sample ID **N014572-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97877**
Client ID: **ZZZZZZ** Batch ID: **R97877** TestNo: **EPA 218.6** Analysis Date: **2/4/2015** SeqNo: **1926436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.904	0.20	5.000	1.742	103	90	110				

Sample ID **N014572-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97877**
Client ID: **ZZZZZZ** Batch ID: **R97877** TestNo: **EPA 218.6** Analysis Date: **2/4/2015** SeqNo: **1926437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.897	0.20	5.000	1.742	103	90	110	6.904	0.113	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014575-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97877**
Client ID: **ZZZZZZ** Batch ID: **R97877** TestNo: **EPA 218.6** Analysis Date: **2/4/2015** SeqNo: **1926441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.141	0.20	1.000	0.1799	96.1	90	110				

Sample ID **N014574-001D-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97877**
Client ID: **ZZZZZZ** Batch ID: **R97877** TestNo: **EPA 218.6** Analysis Date: **2/4/2015** SeqNo: **1926443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.770	0.20	5.000	4.737	101	90	110				

Sample ID **N014575-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **97877**
Client ID: **ZZZZZZ** Batch ID: **R97877** TestNo: **EPA 218.6** Analysis Date: **2/4/2015** SeqNo: **1926445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1134.670	20	500.0	644.3	98.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R98000** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **98000**
Client ID: **LCSW** Batch ID: **R98000** TestNo: **SM 3500-Cr B** Analysis Date: **2/13/2015** SeqNo: **1933021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	250.443	10	250.0	0	100	85	115				

Sample ID **MB-R98000** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **98000**
Client ID: **PBW** Batch ID: **R98000** TestNo: **SM 3500-Cr B** Analysis Date: **2/13/2015** SeqNo: **1933022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014574-002BDUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **98000**
Client ID: **ZZZZZZ** Batch ID: **R98000** TestNo: **SM 3500-Cr B** Analysis Date: **2/13/2015** SeqNo: **1933024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	789.842	20						790.0	0.0175	20	

Sample ID **N014574-002BMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **98000**
Client ID: **ZZZZZZ** Batch ID: **R98000** TestNo: **SM 3500-Cr B** Analysis Date: **2/13/2015** SeqNo: **1933025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1274.438	20	500.0	790.0	96.9	85	115				

Sample ID **N014574-002BMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **98000**
Client ID: **ZZZZZZ** Batch ID: **R98000** TestNo: **SM 3500-Cr B** Analysis Date: **2/13/2015** SeqNo: **1933026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1288.480	20	500.0	790.0	99.7	85	115	1274	1.10	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150210C**	QC Batch: **R98034**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	220	1.2	5.0		mg/L	1	2/10/2015
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	2/10/2015
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	2/10/2015
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	2/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-227
Lab Order:	N014574	**Collection Date:**	2/3/2015 1:00:00 PM
Project:	PG&E Topock IM3Plant-EW, XXXXXX-PT.0P	**Matrix:**	GROUNDWATER
Lab ID:	N014574-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150210C**	QC Batch: **R98034**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	140	1.2	5.0		mg/L	1	2/10/2015
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	2/10/2015
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	2/10/2015
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	2/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R98034** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **98034**
Client ID: **LCSW** Batch ID: **R98034** TestNo: **SM 2320 B** Analysis Date: **2/10/2015** SeqNo: **1934662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	100.000	5.0	100.0	0	100	85	115				
Alkalinity, Total (As CaCO3)	100.000	5.0	100.0	0	100	85	115				

Sample ID **MB-R98034** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **98034**
Client ID: **PBW** Batch ID: **R98034** TestNo: **SM 2320 B** Analysis Date: **2/10/2015** SeqNo: **1934663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N014574-001CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **98034**
Client ID: **ZZZZZZ** Batch ID: **R98034** TestNo: **SM 2320 B** Analysis Date: **2/10/2015** SeqNo: **1934665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	218.085	5.0						217.0	0.489	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	218.085	5.0						217.0	0.489	30	

Sample ID **N014574-002DMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **98034**
Client ID: **ZZZZZZ** Batch ID: **R98034** TestNo: **SM 2320 B** Analysis Date: **2/10/2015** SeqNo: **1934667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	235.106	5.0	100.0	138.3	96.8	75	125				
Alkalinity, Total (As CaCO3)	235.106	5.0	100.0	138.3	96.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N014574-002DMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **98034**
Client ID: **ZZZZZZ** Batch ID: **R98034** TestNo: **SM 2320 B** Analysis Date: **2/10/2015** SeqNo: **1934668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	235.106	5.0	100.0	138.3	96.8	75	125	235.1	0	20	
Alkalinity, Total (As CaCO3)	235.106	5.0	100.0	138.3	96.8	75	125	235.1	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT: CH2M HILL
Lab Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0P
Lab ID: N014574-001

Client Sample ID: PE-01-227
Collection Date: 2/3/2015 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150210A** QC Batch: **R97948**				PrepDate			Analyst: **QBM**
Chloride	1000	5.0	100		mg/L	200	2/10/2015 01:19 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150210A** QC Batch: **R97948**				PrepDate			Analyst: **QBM**
Sulfate	370	1.6	25		mg/L	50	2/10/2015 03:16 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150204C** QC Batch: **R97895**				PrepDate			Analyst: **QBM**
Nitrate as N	ND	0.0051	0.050		mg/L	1	2/5/2015 07:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-15*

CLIENT: CH2M HILL
Lab Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0P
Lab ID: N014574-002

Client Sample ID: TW-03D-227
Collection Date: 2/3/2015 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150210A** QC Batch: **R97948**				PrepDate			Analyst: **QBM**
Chloride	2300	12	250		mg/L	500	2/10/2015 01:30 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150210A** QC Batch: **R97948**				PrepDate			Analyst: **QBM**
Sulfate	510	1.6	25		mg/L	50	2/10/2015 03:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150204C** QC Batch: **R97895**				PrepDate			Analyst: **QBM**
Nitrate as N	3.1	0.010	0.10		mg/L	2	2/5/2015 07:23 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R97948_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **PBW** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R97948_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **LCSW** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.295	0.50	2.500	0	91.8	90	110				

Sample ID **N014571-007CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **ZZZZZZ** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.390	5.0						51.06	3.33	20	

Sample ID **N014571-008CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **ZZZZZZ** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	85.890	5.0	25.00	56.01	120	80	120				

Sample ID **N014571-016CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **ZZZZZZ** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	117.920	10	50.00	63.16	110	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **N014571-016CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **ZZZZZZ** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	112.840	10	50.00	63.16	99.4	80	120	117.9	4.40	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R97948_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **PBW** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R97948_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **LCSW** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.730	0.50	5.000	0	94.6	90	110				

Sample ID **N014571-007CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **ZZZZZZ** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	66.280	5.0						68.56	3.38	20	

Sample ID **N014571-008CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **ZZZZZZ** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	99.380	5.0	50.00	47.05	105	80	120				

Sample ID **N014571-016CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **ZZZZZZ** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	244.160	10	100.0	133.3	111	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **N014571-016CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **97948**
Client ID: **ZZZZZZ** Batch ID: **R97948** TestNo: **EPA 300.0** Analysis Date: **2/10/2015** SeqNo: **1929575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	230.660	10	100.0	133.3	97.4	80	120	244.2	5.69	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300WLLNO3PGE

Sample ID **LCS-R97895_NO3** SampType: **LCS** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97895**
Client ID: **LCSW** Batch ID: **R97895** TestNo: **EPA 300.0** Analysis Date: **2/5/2015** SeqNo: **1927253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	0.967	0.050	1.000	0	96.7	90	110				

Sample ID **MB-R97895_NO3** SampType: **MBLK** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97895**
Client ID: **PBW** Batch ID: **R97895** TestNo: **EPA 300.0** Analysis Date: **2/5/2015** SeqNo: **1927254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.050									

Sample ID **N014570-013CMS** SampType: **MS** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97895**
Client ID: **ZZZZZZ** Batch ID: **R97895** TestNo: **EPA 300.0** Analysis Date: **2/5/2015** SeqNo: **1927256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.360	0.25	5.000	2.560	96.0	80	120				

Sample ID **N014570-013CMSD** SampType: **MSD** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97895**
Client ID: **ZZZZZZ** Batch ID: **R97895** TestNo: **EPA 300.0** Analysis Date: **2/5/2015** SeqNo: **1927257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	7.310	0.25	5.000	2.560	95.0	80	120	7.360	0.682	20	

Sample ID **N014570-014CDUP** SampType: **DUP** TestCode: **300WLLNO3** Units: **mg/L** Prep Date: RunNo: **97895**
Client ID: **ZZZZZZ** Batch ID: **R97895** TestNo: **EPA 300.0** Analysis Date: **2/5/2015** SeqNo: **1927259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.752	0.10						3.762	0.266	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

WORKORDER: N014574

ANALYST LIST

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0, SM 2320B, SM 3500-Cr B
Claire Ignacio	EPA 200.7, EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 4500 H + B
Ryan Balilu	EPA 218.6

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151W. Post Road, Las Vegas, NV 89118
(702) 307-2659 FAX: (702) 307-2691

CHAIN OF CUSTODY RECORD

[IM3Plant-EW-227]

TURNAROUND TIME 10 Days
DATE 02/03/15 PAGE 1 OF 1

COMPANY: CH2M HILL
PROJECT NAME: PG&E Topock IM3Plant-EW
PHONE: 530-229-3303 FAX: 530-339-3303
ADDRESS: 155 Grand Ave Ste 1000, Oakland, CA 94612
P.O. NUMBER: xxxxxx.PT.0P.00
SAMPLERS (SIGNATURE

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr, Mn (200.8) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1) Cl,SO4,NO3(300.0)	TDS (160.1), Alk (SM2320B)	Cr(VI) (218.6)	Dis Ca,Mg,Na,Fe (200.7) Lab filtered									NUMBER OF CONTAINERS	COMMENTS
PE-01-227	02/03/15	13:00	Ground water	X		X	X	X	X									4	N014574-01
TW-03D-227	02/03/15	13:00	Ground water	X	X	X	X		X									4	-02
																		8	TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	Ron Phelps	OMI	2-3-15 13:20
Signature (Received)	Philander Golay	ASSET LABS	2/3/15 1321
Signature (Relinquished)	Philander Golay	ASSET LAB	2/3/15 2045
Signature (Received)	Philander Golay	ASSET LAB	2/3/15 2045
Signature (Relinquished)			
Signature (Received)			

1-9°C
IR #2

SAMPLE CONDITIONS
RECEIVED COOL ☐ WARM ☐ °F
CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/3/2015	Workorder:	N014574
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☑	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☑	NA ☐

Comments: Sample for pH is past holding time upon receipt. Samples for metals are lab filtered then preserved.

Checklist Completed B JPG jpg 02/09/15

Reviewed By: Nancy 2/19/2015

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014574-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(57.1901-57.0915)*1000000}{40}$$

$$= 2465 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2500 mg/L

Julia Ramit 2/6/2015

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO
Date Finished:2/5/15								
MB-48609	100	77.1023	77.1025	2	1	2		
LCS-48609	100	75.7449	75.8418	969	1	969		
N014569-001D	100	55.755	55.8269	719	1	719	981	0.733
N014569-002D	100	53.7662	53.8395	733	1	733	943	0.777
N014569-003D	100	63.528	63.6033	753	1	753	920	0.818
N014569-004D	100	54.9587	55.0301	714	1	714	905	0.789
N014569-005D	100	53.8782	53.9566	784	1	784	963	0.814
N014569-010D	100	54.3686	54.425	564	1	564	687	0.821
N014569-011D	100	54.8424	54.958	1156	1	1156	1418	0.815
N014569-012D	100	61.2495	61.3644	1149	1	1149	1417	0.811
N014574-001C	40	57.0915	57.1901	986	2.5	2465	3460	0.712
N014574-002D	20	55.5762	55.6717	955	5	4775	6100	0.783
N014574-002D DUP	20	55.2087	55.3068	981	5	4905	6100	0.804

Silia Ramit 2/6/2015

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L, in the original sample as follows:

Calcium, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014574-001A**, the concentration in ug/L is calculated as follows:

Calcium, ug/L = 97.76579732 * 1 * (25/25) * 1000

= 97765.79732

Reporting results in two significant figures,

Calcium, ug/L = 98000

Nancy 2/19/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014574
Test Method: EPA 200.7
Analysis Date: 02/17/15

Matrix: Water
Batch No.: 49657

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014574-002A DT 500X	Sodium	ug/L	1577088.6380	PASS	1577476.7060	0.02%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014574
Test Method: EPA 200.7
Analysis Date: 02/18/15

Matrix: Groundwater
Batch No.: 49657

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.
Dilution test failed for Ca. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014575-002C DT 5X	Calcium	ug/L	210552.607	FAIL	183736.4951	14.59%	10
N014575-002C DT 5X	Iron	ug/L	0	NA	0		10
N014575-002C DT 5X	Magnesium	ug/L	35110.1477	PASS	32806.126	7.02%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *18-Feb-15*

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N014574-002A-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **98052**
Client ID: **ZZZZZZ** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/17/2015** SeqNo: **1935443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1611944.678	50000	20000	1577000	172	80	120				S

Sample ID **N014575-002C-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **98075**
Client ID: **ZZZZZZ** Batch ID: **49657** TestNo: **EPA 200.7** Analysis Date: **2/18/2015** SeqNo: **1936911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	192305.337	500	10000	183700	85.7	80	120				
Iron	109.398	20	100.0	0	109	80	120				
Magnesium	44416.964	100	10000	32810	116	80	120				

DT of Na @500x is within criteria

2/19/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Manganese concentration, in ug/L, in the original sample as follows:

Manganese, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014574-001A,** the concentration in ug/L is calculated as follows:

Manganese, ug/L = 36.3429453233919 * 1 * (25/25)

= 36.3429453233919

Reporting results in two significant figures,

Manganese, ug/L = 36

Nancy 2/19/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014574
Test Method: EPA 200.8
Analysis Date: 2/10/2015

Matrix: Groundwater
Batch No.: 49656

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated value is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014574-001A DT 5X	Manganese	ug/L	37.8581511	PASS	36.34294532	4.17%	10
N014574-001A DT 5X	Chromium	ug/L	3.864650265	NA	3.774482976	2.39%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *16-Feb-15*

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	**N014574-001A-PS**	SampType:	**PS**	TestCode:	**200.8_WDISS**	Units:	**µg/L**	Prep Date:	RunNo: **97952**
Client ID:	**ZZZZZZ**	Batch ID:	**49656**	TestNo:	**EPA 200.8**			Analysis Date: **2/10/2015**	SeqNo: **1930288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	125.375	0.50	100.0	36.34	89.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014574
Project: PG&E Topock IM3Plant-EW, XXXXXX-PT.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**N014574-001A-PS**	SampType:	**PS**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:				RunNo:	**97952**
Client ID:	**ZZZZZZ**	Batch ID:	**49656**	TestNo:	**EPA 200.8**			Analysis Date:	**2/10/2015**			SeqNo:	**1930217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.610	1.0	10.00	3.774	88.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

Cr^{+6}, μg/L = A * DF

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014574-001D,** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 4.7373 * 1

= 4.7373

Reporting result in two significant figures,

Cr^{+6}, μg/L = 4.7

Sample ID: **N014574-001C @ pH 7.64**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.75mL)

= **0.0212766 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (10.20) (0.0212766 N) (1) * 1000

=217.02132 **mg/L**

Reporting results in two significant figures,

= 220 **mg/L** as CaCO3

2/16/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.0212766 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (10.20 mL) (0.0212766N) (1) * 1000

= 217.02132 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 217.02132 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 220 **mg/L**

2/16/2015

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N014574-002C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.639 * 500

= 2319.5

Reporting result in two significant figures,

Chloride, mg/L = 2300

Nancy 2/18/2015

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N014574-002B,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 394.99 *2

= 789.98 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 790

2/16/2015

February 24, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014635

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 10, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N014635-006 due to matrix interference. Sample was analyzed at lower dilution however matrix spike was not recovered indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit.

Dilution was necessary for sample N014635-007 due to matrix interference. Sample was analyzed at lower dilution however retention time criteria was not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (5.2 ug/L) and hexavalent chromium (3.6 ug/L) for sample N014635-007 (MW-60BR-245-201) are discrepant, Matrix Spike protocol was performed and the spike recovery is within criteria.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (5.2 ug/L) and hexavalent chromium (3.6 ug/L) for sample N014635-007 (MW-60BR-245-201) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 5.746 and 4.86 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike Duplicate (MSD) on QC sample N014704-001B-MSD is outside recovery criteria for Arsenic possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery

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was acceptable.

Dilution was necessary on some analytes for sample N014635-007 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at a dilution that meet internal standard recovery limit.

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ASSET Laboratories

Date: *24-Feb-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014635
Contract No: 2015-GMP-201-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014635-001A	MW-38S-201	Water	2/9/2015 11:10:00 AM	2/10/2015	2/24/2015
N014635-001B	MW-38S-201	Water	2/9/2015 11:10:00 AM	2/10/2015	2/24/2015
N014635-001C	MW-38S-201	Water	2/9/2015 11:10:00 AM	2/10/2015	2/24/2015
N014635-002A	MW-38S-201SMT	Water	2/9/2015 10:42:00 AM	2/10/2015	2/24/2015
N014635-002B	MW-38S-201SMT	Water	2/9/2015 10:42:00 AM	2/10/2015	2/24/2015
N014635-002C	MW-38S-201SMT	Water	2/9/2015 10:42:00 AM	2/10/2015	2/24/2015
N014635-003A	MW-200-201	Water	2/10/2015 7:15:00 AM	2/10/2015	2/24/2015
N014635-004A	MW-201-201	Water	2/10/2015 7:12:00 AM	2/10/2015	2/24/2015
N014635-005A	MW-202-201	Water	2/10/2015 2:26:00 PM	2/10/2015	2/24/2015
N014635-006A	MW-58BR-201	Water	2/10/2015 1:38:00 PM	2/10/2015	2/24/2015
N014635-006B	MW-58BR-201	Water	2/10/2015 1:38:00 PM	2/10/2015	2/24/2015
N014635-006C	MW-58BR-201	Water	2/10/2015 1:38:00 PM	2/10/2015	2/24/2015
N014635-007A	MW-60BR-245-201	Water	2/10/2015 9:06:00 AM	2/10/2015	2/24/2015
N014635-007B	MW-60BR-245-201	Water	2/10/2015 9:06:00 AM	2/10/2015	2/24/2015
N014635-007C	MW-60BR-245-201	Water	2/10/2015 9:06:00 AM	2/10/2015	2/24/2015
N014635-008A	MW-63-065-201	Water	2/10/2015 10:40:00 AM	2/10/2015	2/24/2015
N014635-008B	MW-63-065-201	Water	2/10/2015 10:40:00 AM	2/10/2015	2/24/2015
N014635-008C	MW-63-065-201	Water	2/10/2015 10:40:00 AM	2/10/2015	2/24/2015
N014635-009A	MW-73-080-201	Water	2/10/2015 9:18:00 AM	2/10/2015	2/24/2015
N014635-009B	MW-73-080-201	Water	2/10/2015 9:18:00 AM	2/10/2015	2/24/2015
N014635-009C	MW-73-080-201	Water	2/10/2015 9:18:00 AM	2/10/2015	2/24/2015

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-201
Lab Order:	N014635	**Collection Date:**	2/9/2015 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150216A**	QC Batch: **R98071**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/16/2015 02:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150219A**	QC Batch: **49741**			PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	2/19/2015 06:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-201SMT
Lab Order:	N014635	**Collection Date:**	2/9/2015 10:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150216A**	QC Batch: **R98071**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.22	0.016	0.20		µg/L	1	2/16/2015 02:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150219A**	QC Batch: **49741**			PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	2/19/2015 06:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-200-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150216A**	QC Batch: **R98071**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/16/2015 02:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-201-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 7:12:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150216A**	QC Batch: **R98071**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/16/2015 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-202-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 2:26:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150216A**	QC Batch: **R98071**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/16/2015 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 1:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150216A** QC Batch: **R98071**				PrepDate			Analyst: **RB**
Hexavalent Chromium	3.6	0.080	1.0		µg/L	5	2/16/2015 06:06 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150219A** QC Batch: **49741**				PrepDate		**2/19/2015**	Analyst: **CEI**
Chromium	3.5	0.030	1.0		µg/L	1	2/19/2015 06:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 9:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150216A** QC Batch: **R98071** PrepDate							Analyst: **RB**
Hexavalent Chromium	3.6	0.080	1.0		µg/L	5	2/16/2015 06:26 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150219A** QC Batch: **49741** PrepDate **2/19/2015**							Analyst: **CEI**
Chromium	5.2	0.030	1.0		µg/L	1	2/19/2015 06:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150216A** QC Batch: **R98071** PrepDate							Analyst: **RB**
Hexavalent Chromium	1.5	0.016	0.20		µg/L	1	2/16/2015 03:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150219A** QC Batch: **49741** PrepDate **2/19/2015**							Analyst: **CEI**
Chromium	1.9	0.030	1.0		µg/L	1	2/19/2015 06:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 9:18:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150216A** QC Batch: **R98071**				PrepDate			Analyst: **RB**
Hexavalent Chromium	21	0.080	1.0		µg/L	5	2/16/2015 06:46 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150219A** QC Batch: **49741**				PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	20	0.030	1.0		µg/L	1	2/19/2015 06:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *24-Feb-15*

CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R98071** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **PBW** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R98071** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **LCSW** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.049	0.20	5.000	0	101	90	110				

Sample ID **N014676-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.735	0.20						12.67	0.527	20	

Sample ID **N014676-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.773	0.20	5.000	12.67	102	90	110				

Sample ID **N014676-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.799	0.20	5.000	12.67	103	90	110	17.77	0.144	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014635-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.184	0.20	1.000	0.1329	105	90	110				

Sample ID **N014635-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.321	0.20	1.000	0.2216	110	90	110				

Sample ID **N014635-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.176	0.20	1.000	0.1090	107	90	110				

Sample ID **N014635-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.09870	102	90	110				

Sample ID **N014635-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.156	0.20	1.000	0.1145	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014635-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.519	0.20	1.000	1.464	105	90	110				

Sample ID **N014635-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.789	1.0	5.000	3.602	104	90	110				

Sample ID **N014635-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.803	1.0	5.000	3.613	104	90	110				

Sample ID **N014635-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98071**
Client ID: **ZZZZZZ** Batch ID: **R98071** TestNo: **EPA 218.6** Analysis Date: **2/16/2015** SeqNo: **1936664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.853	1.0	25.00	20.85	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-49741** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **PBW** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-49741** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **LCSW** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.481	1.0	10.00	0	94.8	85	115				

Sample ID **N014704-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **ZZZZZZ** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.472	1.0	10.00	12.55	99.2	75	125				

Sample ID **N014704-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **ZZZZZZ** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.606	1.0	10.00	12.55	101	75	125	22.47	0.596	20	

Sample ID **N014691-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **ZZZZZZ** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	23.733	1.0	10.00	12.69	110	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-201
Lab Order:	N014635	**Collection Date:**	2/9/2015 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150216B** QC Batch: **R98020** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-201SMT
Lab Order:	N014635	**Collection Date:**	2/9/2015 10:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150216B** QC Batch: **R98020** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 1:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150216B**	QC Batch: **R98020**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	2/16/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 9:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150216B** QC Batch: **R98020** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.095	0.022	0.050		mg/L	1	2/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150216B**	QC Batch: **R98020**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.98	0.022	0.050		mg/L	1	2/16/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 9:18:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150216B** QC Batch: **R98020** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.0	0.11	0.25		mg/L	5	2/16/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R98020** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98020**
Client ID: **PBW** Batch ID: **R98020** TestNo: **SM4500-NO3** Analysis Date: **2/16/2015** SeqNo: **1933641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R98020** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98020**
Client ID: **LCSW** Batch ID: **R98020** TestNo: **SM4500-NO3** Analysis Date: **2/16/2015** SeqNo: **1933642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.981	0.050	1.000	0	98.1	85	115				

Sample ID **N014575-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98020**
Client ID: **ZZZZZZ** Batch ID: **R98020** TestNo: **SM4500-NO3** Analysis Date: **2/16/2015** SeqNo: **1933644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.615	0.25						2.666	1.93	20	

Sample ID **N014575-002IMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98020**
Client ID: **ZZZZZZ** Batch ID: **R98020** TestNo: **SM4500-NO3** Analysis Date: **2/16/2015** SeqNo: **1933646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.643	0.25	5.000	2.563	102	75	125				

Sample ID **N014575-002IMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98020**
Client ID: **ZZZZZZ** Batch ID: **R98020** TestNo: **SM4500-NO3** Analysis Date: **2/16/2015** SeqNo: **1933647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.407	0.25	5.000	2.563	96.9	75	125	7.643	3.14	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-201
Lab Order:	N014635	**Collection Date:**	2/9/2015 11:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150219A**	QC Batch: **49741**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	14	0.027	0.10		µg/L	1	2/19/2015 06:25 PM
Manganese	230	0.13	2.5		µg/L	5	2/20/2015 01:54 PM
Molybdenum	43	0.15	0.50		µg/L	1	2/19/2015 06:25 PM
Selenium	ND	0.069	0.50		µg/L	1	2/19/2015 06:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-201SMT
Lab Order:	N014635	**Collection Date:**	2/9/2015 10:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150219A**	QC Batch: **49741**			PrepDate		**2/19/2015**	Analyst: **CEI**
Arsenic	15	0.027	0.10		µg/L	1	2/19/2015 06:30 PM
Manganese	220	0.13	2.5		µg/L	5	2/20/2015 02:00 PM
Molybdenum	44	0.15	0.50		µg/L	1	2/19/2015 06:30 PM
Selenium	ND	0.069	0.50		µg/L	1	2/19/2015 06:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 1:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150219A**	QC Batch: **49741**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	1.2	0.027	0.10		µg/L	1	2/19/2015 06:36 PM
Manganese	390	0.13	2.5		µg/L	5	2/20/2015 02:05 PM
Molybdenum	25	0.15	0.50		µg/L	1	2/19/2015 06:36 PM
Selenium	1.1	0.069	0.50		µg/L	1	2/20/2015 01:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 9:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150219A**	QC Batch: **49741**				PrepDate	**2/19/2015**	Analyst: **CEI**
Arsenic	6.2	0.027	0.10		µg/L	1	2/19/2015 06:41 PM
Manganese	ND	0.026	0.50		µg/L	1	2/19/2015 06:41 PM
Molybdenum	62	0.76	2.5		µg/L	5	2/20/2015 02:22 PM
Selenium	ND	0.34	2.5		µg/L	5	2/20/2015 02:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 10:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150219A**	QC Batch: **49741**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	1.4	0.027	0.10		µg/L	1	2/19/2015 06:47 PM
Manganese	ND	0.026	0.50		µg/L	1	2/19/2015 06:47 PM
Molybdenum	19	0.15	0.50		µg/L	1	2/19/2015 06:47 PM
Selenium	0.85	0.069	0.50		µg/L	1	2/20/2015 01:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-201
Lab Order:	N014635	**Collection Date:**	2/10/2015 9:18:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014635-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150219A**	QC Batch: **49741**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	2.9	0.027	0.10		µg/L	1	2/19/2015 06:52 PM
Manganese	ND	0.026	0.50		µg/L	1	2/19/2015 06:52 PM
Molybdenum	23	0.15	0.50		µg/L	1	2/19/2015 06:52 PM
Selenium	1.9	0.069	0.50		µg/L	1	2/19/2015 06:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *24-Feb-15*

CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-49741** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **PBW** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.157	0.50									
Selenium	ND	0.50									

Sample ID **LCS-49741** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **LCSW** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.957	0.10	10.00	0	89.6	85	115				
Manganese	94.791	0.50	100.0	0	94.8	85	115				
Molybdenum	9.677	0.50	10.00	0	96.8	85	115				
Selenium	9.194	0.50	10.00	0	91.9	85	115				

Sample ID **N014704-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **ZZZZZZ** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	65.850	0.10	10.00	53.90	119	75	125				
Manganese	92.377	0.50	100.0	0	92.4	75	125				
Molybdenum	21.728	0.50	10.00	11.67	101	75	125				
Selenium	9.563	0.50	10.00	0.3659	92.0	75	125				

Sample ID **N014704-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98124**
Client ID: **ZZZZZZ** Batch ID: **49741** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2015** SeqNo: **1938332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	66.784	0.10	10.00	53.90	129	75	125	65.85	1.41	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N014704-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/19/2015	RunNo:	98124
Client ID:	ZZZZZZ	Batch ID:	49741	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2015	SeqNo:	1938332

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.844	0.50	100.0	0	92.8	75	125	92.38	0.505	20	
Molybdenum	21.758	0.50	10.00	11.67	101	75	125	21.73	0.139	20	
Selenium	9.185	0.50	10.00	0.3659	88.2	75	125	9.563	4.03	20	

Sample ID	N014691-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/19/2015	RunNo:	98124
Client ID:	ZZZZZZ	Batch ID:	49741	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2015	SeqNo:	1938333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	64.464	0.10	10.00	55.25	92.2	75	125				
Manganese	101.001	0.50	100.0	0	101	75	125				
Molybdenum	22.305	0.50	10.00	10.66	116	75	125				
Selenium	10.095	0.50	10.00	0.6287	94.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2015 2:38:35 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-201-Q1
Turnaround Time 10 Days
Shipping Date: 2/10/2015
COC Number: 2

			Container:	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	Field	NA			
			Holding Time:	28	180	180	180	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
MW-38S-201	2/9/2015	11:10	Water	X	X	X	X	X	N014635 - 1	3	
MW-38S-201SMT	2/9/2015	10:42	Water	X	X	X	X	X	- 2	3	
MW-200-201	2/10/2015	7:15	Water	X					- 3	1	
MW-201-201	2/10/2015	7:12	Water	X					- 4	1	
MW-202-201	2/10/2015	14:26	Water	X					- 5	1	
MW-58BR-201	2/10/2015	13:38	Water	X	X	X	X	X	- 6	3	
MW-60BR-245-201	2/10/2015	9:06	Water	X	X	X	X	X	- 7	3	
MW-63-065-201	2/10/2015	10:40	Water	X	X	X	X	X	- 8	3	
MW-73-080-201	2/10/2015	9:18	Water	X	X	X	X	X	- 9	3	
									TOTAL NUMBER OF CONTAINERS	21	

	Signatures	Date/Time
Approved by		2-10-15 1540
Sampled by		
Relinquished by		
Received by		2/10/15 1540
Relinquished by		2/10/15 1746
Received by		2/10/15

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1-8-2 IR#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody
and
Marlon

Special Instructions:
Feb 9-19, 2015

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/10/2015	Workorder:	N014635
Rep sample Temp (Deg C):	1.8	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For: 2/11/2015

Checklist Completed By: JPG

Reviewed By: 02/17/15

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014635-002A,** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.2216 * 1

= 0.2216

Reporting result in two significant figures,

Cr^{+6}, µg/L = 0.22

SAMPLE CALCULATION

METHOD: SM 4500_NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction Method
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

Where:

A= mg/L, Nitrate/Nitrite-N instrument calculated concentration

DF= dilution factor

For **N014635-006C,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.3356 * 1

= 0.3356 mg/L

Reporting result in 2 significant figures,

Nitrate/Nitrite-N, mg/L = 0.34

2/24/2015

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014635-001B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 14.1220313693908 * 1 * (25/25)

= 14.1220313693908

Reporting results in two significant figures,

Arsenic, ug/L = 14

2/24/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014635
Test Method: EPA 6020
Analysis Date: 2/19/2015

Matrix: Water
Batch No.: 49741

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to all analytes except As. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014704-001B DT 5X	Arsenic	ug/L	57.49921755	PASS	53.90240554	6.67%	10
N014704-001B DT 5X	Chromium	ug/L	13.47291991	NA	12.55295057	7.33%	10
N014704-001B DT 5X	Manganese	ug/L	0	NA	0		10
N014704-001B DT 5X	Molybdenum	ug/L	11.80220793	NA	11.66782985	1.15%	10
N014704-001B DT 5X	Selenium	ug/L	0	NA	0.365945516	100.00%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *23-Feb-15*

CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014704-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**98124**	
Client ID:	**ZZZZZZ**	Batch ID:	**49741**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**2/19/2015**		SeqNo:	**1938254**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.598	1.0	10.00	12.55	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

Date: *23-Feb-15*

CLIENT: CH2M HILL
Work Order: N014635
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014704-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**98124**
Client ID:	**ZZZZZZ**	Batch ID:	**49741**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**2/19/2015**	SeqNo:	**1938330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	64.229	0.10	10.00	53.90	103	80	120				
Manganese	96.127	0.50	100.0	0	96.1	80	120				
Molybdenum	21.457	0.50	10.00	11.67	97.9	80	120				
Selenium	9.039	0.50	10.00	0.3659	86.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

March 06, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014696

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 17, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *06-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014696

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N014696-005A (MW-72BR-200-201) due to matrix interference. Sample was analyzed at lower dilution however retention time criteria was not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (56 ug/L) and hexavalent chromium (14 ug/L) for sample N014696-015 (MW-65-160-201) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Analytical Comments for EPA 6020_Dissolved::

Because the results for total dissolved chromium (56.12 ug/L) and hexavalent chromium (13.54 ug/L) for sample N014696-015 (MW-65-160-201) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 49.07 and 29.27 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Dilution was necessary on some analytes for samples N014696-003, N014696-004, N014696-005, N014696-007, N014696-008, N014696-010, N014696-014 and N014696-016 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) on QC sample N014696-017B-MS are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was

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acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014696-003B-MS, N014696-003B-MSD and N014696-017B-MS are outside recovery criteria for Chromium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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Date: *06-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014696
Contract No: 2015-GMP-201-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014696-001A	MW-203-201	Water	2/11/2015 2:17:00 PM	2/17/2015	3/6/2015
N014696-002A	MW-204-201	Water	2/11/2015 2:18:00 PM	2/17/2015	3/6/2015
N014696-003A	MW-62-110-201	Water	2/11/2015 2:08:00 PM	2/17/2015	3/6/2015
N014696-003B	MW-62-110-201	Water	2/11/2015 2:08:00 PM	2/17/2015	3/6/2015
N014696-003C	MW-62-110-201	Water	2/11/2015 2:08:00 PM	2/17/2015	3/6/2015
N014696-004A	MW-72-080-201	Water	2/11/2015 1:10:00 PM	2/17/2015	3/6/2015
N014696-004B	MW-72-080-201	Water	2/11/2015 1:10:00 PM	2/17/2015	3/6/2015
N014696-004C	MW-72-080-201	Water	2/11/2015 1:10:00 PM	2/17/2015	3/6/2015
N014696-005A	MW-72BR-200-201	Water	2/11/2015 12:18:00 PM	2/17/2015	3/6/2015
N014696-005B	MW-72BR-200-201	Water	2/11/2015 12:18:00 PM	2/17/2015	3/6/2015
N014696-005C	MW-72BR-200-201	Water	2/11/2015 12:18:00 PM	2/17/2015	3/6/2015
N014696-006A	MW-121-201	Water	2/16/2015 7:00:00 AM	2/17/2015	3/6/2015
N014696-006B	MW-121-201	Water	2/16/2015 7:00:00 AM	2/17/2015	3/6/2015
N014696-006C	MW-121-201	Water	2/16/2015 7:00:00 AM	2/17/2015	3/6/2015
N014696-007A	MW-34-100-201	Water	2/16/2015 12:32:00 PM	2/17/2015	3/6/2015
N014696-007B	MW-34-100-201	Water	2/16/2015 12:32:00 PM	2/17/2015	3/6/2015
N014696-007C	MW-34-100-201	Water	2/16/2015 12:32:00 PM	2/17/2015	3/6/2015
N014696-008A	MW-46-175-201	Water	2/16/2015 11:20:00 AM	2/17/2015	3/6/2015
N014696-008B	MW-46-175-201	Water	2/16/2015 11:20:00 AM	2/17/2015	3/6/2015
N014696-008C	MW-46-175-201	Water	2/16/2015 11:20:00 AM	2/17/2015	3/6/2015
N014696-009A	MW-62-065-201	Water	2/16/2015 9:02:00 AM	2/17/2015	3/6/2015
N014696-009B	MW-62-065-201	Water	2/16/2015 9:02:00 AM	2/17/2015	3/6/2015
N014696-009C	MW-62-065-201	Water	2/16/2015 9:02:00 AM	2/17/2015	3/6/2015
N014696-010A	MW-120-201	Water	2/17/2015 8:00:00 AM	2/17/2015	3/6/2015
N014696-010B	MW-120-201	Water	2/17/2015 8:00:00 AM	2/17/2015	3/6/2015
N014696-010C	MW-120-201	Water	2/17/2015 8:00:00 AM	2/17/2015	3/6/2015
N014696-011A	MW-205-201	Water	2/17/2015 6:31:00 AM	2/17/2015	3/6/2015
N014696-012A	MW-206-201	Water	2/17/2015 2:15:00 PM	2/17/2015	3/6/2015
N014696-013A	MW-207-201	Water	2/17/2015 2:14:00 PM	2/17/2015	3/6/2015

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CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014696
Contract No: 2015-GMP-201-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014696-014A	MW-44-115-201	Water	2/17/2015 8:48:00 AM	2/17/2015	3/6/2015
N014696-014B	MW-44-115-201	Water	2/17/2015 8:48:00 AM	2/17/2015	3/6/2015
N014696-014C	MW-44-115-201	Water	2/17/2015 8:48:00 AM	2/17/2015	3/6/2015
N014696-015A	MW-65-160-201	Water	2/17/2015 10:32:00 AM	2/17/2015	3/6/2015
N014696-015B	MW-65-160-201	Water	2/17/2015 10:32:00 AM	2/17/2015	3/6/2015
N014696-015C	MW-65-160-201	Water	2/17/2015 10:32:00 AM	2/17/2015	3/6/2015
N014696-016A	MW-65-225-201	Water	2/17/2015 11:14:00 AM	2/17/2015	3/6/2015
N014696-016B	MW-65-225-201	Water	2/17/2015 11:14:00 AM	2/17/2015	3/6/2015
N014696-016C	MW-65-225-201	Water	2/17/2015 11:14:00 AM	2/17/2015	3/6/2015
N014696-017A	MW-69-195-201	Water	2/17/2015 1:05:00 PM	2/17/2015	3/6/2015
N014696-017B	MW-69-195-201	Water	2/17/2015 1:05:00 PM	2/17/2015	3/6/2015
N014696-017C	MW-69-195-201	Water	2/17/2015 1:05:00 PM	2/17/2015	3/6/2015

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-203-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 2:17:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A**	QC Batch: **R98164**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/23/2015 01:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-204-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 2:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A**	QC Batch: **R98164**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/23/2015 02:16 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 2:08:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150227C**	QC Batch: **R99221**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	1200	6.9	50		µg/L	5	2/27/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	1300	0.76	25		µg/L	25	2/23/2015 02:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 1:10:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A** QC Batch: **R98164**				PrepDate			Analyst: **RB**
Hexavalent Chromium	130	0.32	4.0		µg/L	20	2/23/2015 02:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150223A** QC Batch: **49742**				PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	110	0.030	1.0		µg/L	1	2/23/2015 11:42 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 12:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A** QC Batch: **R98164**				PrepDate			Analyst: **RB**
Hexavalent Chromium	6.5	0.080	1.0		µg/L	5	2/23/2015 07:15 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150223A** QC Batch: **49742**				PrepDate		**2/19/2015**	Analyst: **CEI**
Chromium	5.6	0.030	1.0		µg/L	1	2/23/2015 11:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150227C**	QC Batch: **R99221**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	530	1.4	10		µg/L	1	2/27/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate		**2/19/2015**	Analyst: **CEI**
Chromium	510	0.15	5.0		µg/L	5	2/23/2015 12:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 12:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A** QC Batch: **R98164** PrepDate							Analyst: **RB**
Hexavalent Chromium	230	0.32	4.0		µg/L	20	2/23/2015 03:36 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150223A** QC Batch: **49742** PrepDate **2/19/2015**							Analyst: **CEI**
Chromium	210	0.15	5.0		µg/L	5	2/23/2015 12:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 11:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A** QC Batch: **R98164**				PrepDate			Analyst: **RB**
Hexavalent Chromium	25	0.080	1.0		µg/L	5	2/23/2015 03:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150223A** QC Batch: **49742**				PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	21	0.030	1.0		µg/L	1	2/23/2015 12:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150227C**	QC Batch: **R99221**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	520	1.4	10		µg/L	1	2/27/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate		**2/19/2015**	Analyst: **CEI**
Chromium	510	0.15	5.0		µg/L	5	2/23/2015 01:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-120-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A** QC Batch: **R98164**				PrepDate			Analyst: **RB**
Hexavalent Chromium	37	0.080	1.0		µg/L	5	2/23/2015 04:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150223A** QC Batch: **49742**				PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	31	0.030	1.0		µg/L	1	2/23/2015 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-205-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 6:31:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A**	QC Batch: **R98164**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/23/2015 04:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-206-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 2:15:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A**	QC Batch: **R98164**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/23/2015 05:16 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-207-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 2:14:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A**	QC Batch: **R98164**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/23/2015 05:36 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 8:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A** QC Batch: **R98164** PrepDate							Analyst: **RB**
Hexavalent Chromium	37	0.080	1.0		µg/L	5	2/23/2015 05:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150223A** QC Batch: **49742** PrepDate **2/19/2015**							Analyst: **CEI**
Chromium	31	0.030	1.0		µg/L	1	2/23/2015 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 10:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150224A** QC Batch: **R98165**				PrepDate			Analyst: **RB**
Hexavalent Chromium	14	0.032	0.40		µg/L	2	2/24/2015 11:28 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150223A** QC Batch: **49742**				PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	56	0.030	1.0		µg/L	1	2/23/2015 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 11:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150223A** QC Batch: **R98164**				PrepDate			Analyst: **RB**
Hexavalent Chromium	150	0.32	4.0		µg/L	20	2/23/2015 06:55 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150223A** QC Batch: **49742**				PrepDate	**2/19/2015**		Analyst: **CEI**
Chromium	140	0.15	5.0		µg/L	5	2/23/2015 01:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150227C** QC Batch: **R99221**				PrepDate			Analyst: **QBM**
Chromium, Hexavalent	930	2.8	20		µg/L	2	2/27/2015
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **ICP7_150223A** QC Batch: **49742**				PrepDate		**2/19/2015**	Analyst: **CEI**
Chromium	800	0.15	5.0		µg/L	5	2/23/2015 02:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *06-Mar-15*

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R98164** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **PBW** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R98164** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **LCSW** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.059	0.20	5.000	0	101	90	110				

Sample ID **N014696-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **ZZZZZZ** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.093	0.20						0.1049	0	20	

Sample ID **N014696-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **ZZZZZZ** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0.1049	96.4	90	110				

Sample ID **N014696-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **ZZZZZZ** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.146	0.20	1.000	0.1049	104	90	110	1.069	6.90	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014696-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **ZZZZZZ** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.103	0.20	1.000	0.08890	101	90	110				

Sample ID **N014696-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **ZZZZZZ** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	229.588	4.0	100.0	133.0	96.6	90	110				

Sample ID **N014696-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **ZZZZZZ** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	326.810	4.0	100.0	229.7	97.1	90	110				

Sample ID **N014696-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **ZZZZZZ** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941420**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	49.865	1.0	25.00	24.78	100	90	110				

Sample ID **N014696-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98164**
Client ID: **ZZZZZZ** Batch ID: **R98164** TestNo: **EPA 218.6** Analysis Date: **2/23/2015** SeqNo: **1941422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60.881	1.0	25.00	36.60	97.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N014696-011A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 98164
Client ID:	ZZZZZZ	Batch ID: R98164	TestNo: EPA 218.6		Analysis Date: 2/23/2015	SeqNo: 1941426

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.155	0.20	1.000	0.1002	105	90	110				

Sample ID	N014696-012A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 98164
Client ID:	ZZZZZZ	Batch ID: R98164	TestNo: EPA 218.6		Analysis Date: 2/23/2015	SeqNo: 1941428

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.169	0.20	1.000	0.1130	106	90	110				

Sample ID	N014696-013A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 98164
Client ID:	ZZZZZZ	Batch ID: R98164	TestNo: EPA 218.6		Analysis Date: 2/23/2015	SeqNo: 1941430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.161	0.20	1.000	0.1191	104	90	110				

Sample ID	N014696-014A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 98164
Client ID:	ZZZZZZ	Batch ID: R98164	TestNo: EPA 218.6		Analysis Date: 2/23/2015	SeqNo: 1941432

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	61.939	1.0	25.00	36.83	100	90	110				

Sample ID	N014696-016A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 98164
Client ID:	ZZZZZZ	Batch ID: R98164	TestNo: EPA 218.6		Analysis Date: 2/23/2015	SeqNo: 1941436

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	247.958	4.0	100.0	146.8	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**N014696-005A-MS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:			RunNo:	**98164**	
Client ID:	**ZZZZZZ**	Batch ID:	**R98164**	TestNo:	**EPA 218.6**			Analysis Date:	**2/23/2015**		SeqNo:	**1941438**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	32.186	1.0	25.00	6.516	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R98165** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98165**
Client ID: **PBW** Batch ID: **R98165** TestNo: **EPA 218.6** Analysis Date: **2/24/2015** SeqNo: **1941447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R98165** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98165**
Client ID: **LCSW** Batch ID: **R98165** TestNo: **EPA 218.6** Analysis Date: **2/24/2015** SeqNo: **1941448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.192	0.20	5.000	0	104	90	110				

Sample ID **N014696-015A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98165**
Client ID: **ZZZZZZ** Batch ID: **R98165** TestNo: **EPA 218.6** Analysis Date: **2/24/2015** SeqNo: **1941450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.461	0.40						13.54	0.621	20	

Sample ID **N014696-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98165**
Client ID: **ZZZZZZ** Batch ID: **R98165** TestNo: **EPA 218.6** Analysis Date: **2/24/2015** SeqNo: **1941451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	23.825	0.40	10.00	13.54	103	90	110				

Sample ID **N014696-015A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98165**
Client ID: **ZZZZZZ** Batch ID: **R98165** TestNo: **EPA 218.6** Analysis Date: **2/24/2015** SeqNo: **1941452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	24.031	0.40	10.00	13.54	105	90	110	23.82	0.861	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014742-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98165**
Client ID: **ZZZZZZ** Batch ID: **R98165** TestNo: **EPA 218.6** Analysis Date: **2/24/2015** SeqNo: **1941455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.795	0.20	1.000	1.723	107	90	110				

Sample ID **N014742-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **98165**
Client ID: **ZZZZZZ** Batch ID: **R98165** TestNo: **EPA 218.6** Analysis Date: **2/24/2015** SeqNo: **1941457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.805	0.20	1.000	1.770	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R99221** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **LCSW** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	249.785	10	250.0	0	99.9	85	115				

Sample ID **MB-R99221** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **PBW** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014759-002ADUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **ZZZZZZ** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	31557.000	1000						31430	0.413	20	

Sample ID **N014696-003AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **ZZZZZZ** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2410.180	50	1250	1173	99.0	85	115				

Sample ID **N014696-003AMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **ZZZZZZ** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2437.330	50	1250	1173	101	85	115	2410	1.12	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-49742** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **PBW** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.038	1.0									

Sample ID **LCS-49742** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **LCSW** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.770	1.0	10.00	0	97.7	85	115				

Sample ID **N014696-017B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	849.986	5.0	10.00	799.5	505	75	125				S

Sample ID **N014696-003B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1187.681	25	10.00	1282	-939	75	125				S

Sample ID **N014696-003B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1188.447	25	10.00	1282	-931	75	125	1188	0.0645	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 2:08:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	3.9	0.11	0.25		mg/L	5	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 1:10:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	1.0	0.022	0.050		mg/L	1	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 12:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.16	0.022	0.050		mg/L	1	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	4.0	0.11	0.25		mg/L	5	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 12:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.61	0.022	0.050		mg/L	1	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 11:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	4.1	0.11	0.25		mg/L	5	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-120-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.23	0.022	0.050		mg/L	1	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 8:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.23	0.022	0.050		mg/L	1	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 10:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 11:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.1	0.044	0.10		mg/L	2	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150223A** QC Batch: **R98141** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	16	0.44	1.0		mg/L	20	2/23/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R98141** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98141**
Client ID: **PBW** Batch ID: **R98141** TestNo: **SM4500-NO3** Analysis Date: **2/23/2015** SeqNo: **1939020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R98141** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98141**
Client ID: **LCSW** Batch ID: **R98141** TestNo: **SM4500-NO3** Analysis Date: **2/23/2015** SeqNo: **1939021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.978	0.050	1.000	0	97.8	85	115				

Sample ID **N014696-003CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98141**
Client ID: **ZZZZZZ** Batch ID: **R98141** TestNo: **SM4500-NO3** Analysis Date: **2/23/2015** SeqNo: **1939023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.967	0.25	5.000	3.866	102	75	125				

Sample ID **N014696-003CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98141**
Client ID: **ZZZZZZ** Batch ID: **R98141** TestNo: **SM4500-NO3** Analysis Date: **2/23/2015** SeqNo: **1939024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.017	0.25	5.000	3.866	103	75	125	8.966	0.562	20	

Sample ID **N014696-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **98141**
Client ID: **ZZZZZZ** Batch ID: **R98141** TestNo: **SM4500-NO3** Analysis Date: **2/23/2015** SeqNo: **1939026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.053	0.050						1.041	1.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 2:08:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	6.3	0.027	0.10		µg/L	1	2/23/2015 11:37 AM
Manganese	52	0.026	0.50		µg/L	1	2/23/2015 11:37 AM
Molybdenum	43	0.76	2.5		µg/L	5	2/24/2015 02:45 PM
Selenium	3.6	0.34	2.5		µg/L	5	2/24/2015 02:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 1:10:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	12	0.13	0.50		µg/L	5	2/23/2015 12:06 PM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 11:42 AM
Molybdenum	78	0.76	2.5		µg/L	5	2/24/2015 02:50 PM
Selenium	ND	0.34	2.5		µg/L	5	2/24/2015 02:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-201
Lab Order:	N014696	**Collection Date:**	2/11/2015 12:18:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	14	0.027	0.10		µg/L	1	2/23/2015 11:48 AM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 11:48 AM
Molybdenum	78	0.76	2.5		µg/L	5	2/24/2015 02:56 PM
Selenium	ND	0.34	2.5		µg/L	5	2/24/2015 02:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	1.5	0.027	0.10		µg/L	1	2/23/2015 11:53 AM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 11:53 AM
Molybdenum	14	0.15	0.50		µg/L	1	2/24/2015 03:01 PM
Selenium	3.4	0.069	0.50		µg/L	1	2/24/2015 03:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 12:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	1.5	0.13	0.50		µg/L	5	2/23/2015 12:38 PM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 12:33 PM
Molybdenum	76	0.76	2.5		µg/L	5	2/24/2015 03:07 PM
Selenium	ND	0.34	2.5		µg/L	5	2/24/2015 03:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 11:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150224B**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Molybdenum	200	0.76	2.5		µg/L	5	2/24/2015 03:12 PM
Selenium	ND	0.34	2.5		µg/L	5	2/24/2015 03:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-201
Lab Order:	N014696	**Collection Date:**	2/16/2015 9:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	1.5	0.027	0.10		µg/L	1	2/23/2015 12:55 PM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 12:55 PM
Molybdenum	14	0.15	0.50		µg/L	1	2/24/2015 03:18 PM
Selenium	3.2	0.069	0.50		µg/L	1	2/24/2015 03:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-120-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	5.5	0.027	0.10		µg/L	1	2/23/2015 01:06 PM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 01:06 PM
Molybdenum	86	0.76	2.5		µg/L	5	2/24/2015 03:23 PM
Selenium	ND	0.34	2.5		µg/L	5	2/24/2015 03:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 8:48:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	5.6	0.027	0.10		µg/L	1	2/23/2015 01:17 PM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 01:17 PM
Molybdenum	88	0.76	2.5		µg/L	5	2/24/2015 03:29 PM
Selenium	ND	0.34	2.5		µg/L	5	2/24/2015 03:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 10:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	0.42	0.027	0.10		µg/L	1	2/23/2015 01:40 PM
Manganese	51	0.026	0.50		µg/L	1	2/23/2015 01:40 PM
Molybdenum	28	0.15	0.50		µg/L	1	2/24/2015 03:34 PM
Selenium	7.5	0.069	0.50		µg/L	1	2/24/2015 03:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 11:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	2.8	0.13	0.50		µg/L	5	2/23/2015 01:56 PM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 01:51 PM
Molybdenum	55	0.76	2.5		µg/L	5	2/24/2015 03:51 PM
Selenium	ND	0.34	2.5		µg/L	5	2/24/2015 03:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-201
Lab Order:	N014696	**Collection Date:**	2/17/2015 1:05:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014696-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150223A**	QC Batch: **49742**			PrepDate	**2/19/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	2/23/2015 02:02 PM
Manganese	ND	0.026	0.50		µg/L	1	2/23/2015 02:02 PM
Molybdenum	81	0.15	0.50		µg/L	1	2/24/2015 03:56 PM
Selenium	9.0	0.069	0.50		µg/L	1	2/24/2015 03:56 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-49742** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **PBW** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.062	0.50									

Sample ID **LCS-49742** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **LCSW** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.628	0.10	10.00	0	96.3	85	115				
Manganese	94.843	0.50	100.0	0	94.8	85	115				

Sample ID **N014696-003B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.322	0.10	10.00	6.344	99.8	75	125				
Manganese	139.290	0.50	100.0	52.43	86.9	75	125				

Sample ID **N014696-003B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.175	0.10	10.00	6.344	98.3	75	125	16.32	0.901	20	
Manganese	137.652	0.50	100.0	52.43	85.2	75	125	139.3	1.18	20	

Sample ID **N014696-017B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014696-017B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **98154**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.675	0.10	10.00	2.256	104	75	125				
Manganese	73.527	0.50	100.0	0	73.5	75	125				S

Sample ID **MB-49742** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **99182**
Client ID: **PBW** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/24/2015** SeqNo: **1942793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-49742** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **99182**
Client ID: **LCSW** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/24/2015** SeqNo: **1942794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.647	0.50	10.00	0	96.5	85	115				
Selenium	9.997	0.50	10.00	0	100	85	115				

Sample ID **N014696-017B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **99182**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/24/2015** SeqNo: **1942814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	95.073	0.50	10.00	80.62	145	75	125				S
Selenium	18.858	0.50	10.00	8.982	98.8	75	125				

Sample ID **N014696-003B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/19/2015** RunNo: **99182**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/24/2015** SeqNo: **1942817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	54.024	2.5	10.00	42.66	114	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N014696-003B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/19/2015	RunNo:	99182
Client ID:	ZZZZZZ	Batch ID:	49742	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/24/2015	SeqNo:	1942817

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	13.013	2.5	10.00	3.642	93.7	75	125				

Sample ID	N014696-003B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/19/2015	RunNo:	99182
Client ID:	ZZZZZZ	Batch ID:	49742	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/24/2015	SeqNo:	1942818

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	54.231	2.5	10.00	42.66	116	75	125	54.02	0.382	20	
Selenium	12.561	2.5	10.00	3.642	89.2	75	125	13.01	3.53	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

2/17/2015 2:39:39 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-201-Q1
Turnaround Time 10 Days
Shipping Date: 2/17/2015
COC Number: 3

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	NA			
			Holding Time:	28	28	180	180	180	180	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A) Field Filtered Mo,Se,Mn	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
MW-203-201	2/11/2015	14:17	Water	X							N014696-1	1	
MW-204-201	2/11/2015	14:18	Water	X							-2	1	
MW-62-110-201	2/11/2015	14:08	Water		X	X	X		X	X	-3	3	
MW-72-080-201	2/11/2015	13:10	Water	X		X	X		X	X	-4	3	
MW-72BR-200-201	2/11/2015	12:18	Water	X		X	X		X	X	-5	3	
MW-121-201	2/16/2015	7:00	Water		X	X	X		X	X	-6	3	
MW-34-100-201	2/16/2015	12:32	Water	X		X	X		X	X	-7	3	
MW-46-175-201	2/16/2015	11:20	Water	X			X	X		X	-8	3	
MW-62-065-201	2/16/2015	9:02	Water		X	X	X		X	X	-9	3	
MW-120-201	2/17/2015	8:00	Water	X		X	X		X	X	-10	3	
MW-205-201	2/17/2015	6:31	Water	X							-11	1	
MW-206-201	2/17/2015	14:15	Water	X							-12	1	
MW-207-201	2/17/2015	14:14	Water	X							-13	1	
MW-44-115-201	2/17/2015	8:48	Water	X		X	X		X	X	-14	3	

	Signatures	Date/Time
Approved by		2-17-15 1443
Sampled by		
Relinquished by		
Received by		2/17/15 1443
Relinquished by		2/17/15
Received by		2/17/15 AM

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1-9°C IR#
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody
and
Marlon

Special Instructions:
Feb 9-19, 2015

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/17/2015 2:39:42 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-201-Q1
Turnaround Time 10 Days
Shipping Date: 2/17/2015
COC Number: 3

				Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A) Field Filtered Mo,Se,Mn	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
Container:				250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	125 ml Poly			
Preservatives:				(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	H2SO4, pH<2, 4°C			
Filtered:				Field	Field	Field	Field	Field	Field	NA			
Holding Time:				28	28	180	180	180	180	28			
	DATE	TIME	Matrix										
MW-65-160-201	2/17/2015	10:32	Water	X		X	X		X	X	No14696 - 15	3	
MW-65-225-201	2/17/2015	11:14	Water	X		X	X		X	X	1 - 16	3	
MW-69-195-201	2/17/2015	13:05	Water		X	X	X		X	X	1 - 17	3	
											TOTAL NUMBER OF CONTAINERS	41	

	Signatures	Date/Time
Approved by		2-17-15 1443
Sampled by		
Relinquished by		2/17/15 1448
Received by		2/17/15 1715
Relinquished by		2/17/15 1715
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1-gal 1pk#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody
and
Marlon

Special Instructions:
Feb 9-19, 2015

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/17/2015	Workorder:	N014696
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: HG 2/18/2015

Reviewed By: 02/20/15

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014696-016A,** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 7.3401 * 20

= 146.802

Reporting result in two significant figures,

Cr^{+6}, µg/L = 150

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N014696-003A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 234.587 *5

= 1172.935 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 1200

3/3/2015

SAMPLE CALCULATION

METHOD: SM 4500_NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction Method
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

Where:

A= mg/L, Nitrate/Nitrite-N instrument calculated concentration

DF= dilution factor

For **N014696-003C,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.7731 * 5

= 3.8655 mg/L

Reporting result in 2 significant figures,

Nitrate/Nitrite-N, mg/L = 3.9

2/23/2015

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014696-006B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 101.544574387898 * 5 * (25/25)

= 507.72287193949

Reporting results in two significant figures,

Chromium, ug/L = 510

3/3/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014696
Test Method: EPA 6020
Analysis Date: 2/23/2015

Matrix: Water
Batch No.: 49742

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test failed for Cr and Mn. PS passed criteria for Mn.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014696-003B DT 5X	Arsenic	ug/L	6.917795798	PASS	6.343625801	9.05%	10
N014696-003B DT 125X	Chromium	ug/L	1415.137492	FAIL	1281.562654	10.42%	10
N014696-003B DT 5X	Manganese	ug/L	61.07349943	FAIL	52.43284395	16.48%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014696
Test Method: EPA 6020
Analysis Date: 2/24/2015

Matrix: Water
Batch No.: 49742

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to ~~Mo &~~ Se. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014696-003B DT 25X	Molybdenum	ug/L	44.87106	NA	42.65835666	5.19%	10
N014696-003B DT 25X	Selenium	ug/L	4.018677	NA	3.642044481	10.34%	10

Note: NA - Not applicable

Mary 3/3/2015
for

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014696-003B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **98154**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/23/2015** SeqNo: **1940703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.432	0.10	10.00	6.344	101	80	120				
Manganese	137.365	0.50	100.0	52.43	84.9	80	120				

Sample ID **N014696-003B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **99182**
Client ID: **ZZZZZZ** Batch ID: **49742** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/24/2015** SeqNo: **1942816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	54.482	2.5	10.00	42.66	118	80	120				
Selenium	13.524	2.5	10.00	3.642	98.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014696
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014696-003B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**98154**
Client ID:	**ZZZZZZ**	Batch ID:	**49742**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**2/23/2015**		SeqNo:	**1940618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1194.534	25	10.00	1282	-870	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

March 10, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014759

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 24, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014759

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N014759-001 (MW-64BR-201) due to matrix interference. Sample was analyzed at lower dilution however, Matrix Spike retention time criteria was not met indicating possible matrix interference. Sample was reported at dilution with Matrix Spike that met recovery limit and within retention time window.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N014759-001 (MW-64BR-201) are discrepant, sample reanalysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0.0 ug/L) for sample N014759-001 (MW-64BR-201) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.553 and 3.869 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014759-001B-MS and N014759-001B-MSD are outside recovery criteria for Manganese since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for sample N014759-001 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and

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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
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internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

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P: 702.307.2659 F: 702.307.2691

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ASSET Laboratories

Date: *10-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N014759
Contract No: 2015-GMP-201-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014759-001A	MW-64BR-201	Water	2/18/2015 10:15:00 AM	2/24/2015	3/10/2015
N014759-001B	MW-64BR-201	Water	2/18/2015 10:15:00 AM	2/24/2015	3/10/2015
N014759-001C	MW-64BR-201	Water	2/18/2015 10:15:00 AM	2/24/2015	3/10/2015
N014759-002A	MW-68-180-201	Water	2/18/2015 12:33:00 PM	2/24/2015	3/10/2015
N014759-002B	MW-68-180-201	Water	2/18/2015 12:33:00 PM	2/24/2015	3/10/2015
N014759-002C	MW-68-180-201	Water	2/18/2015 12:33:00 PM	2/24/2015	3/10/2015

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ANALYTICAL RESULTS

Print Date: *10-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-201
Lab Order:	N014759	**Collection Date:**	2/18/2015 10:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014759-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150302A**	QC Batch: **R99263**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.080	1.0		µg/L	5	3/2/2015 02:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150307A**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Chromium	1.3	0.030	1.0		µg/L	1	3/7/2015 12:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-201
Lab Order:	N014759	**Collection Date:**	2/18/2015 12:33:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014759-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150227C**	QC Batch: **R99221**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	31000	140	1000		µg/L	100	2/27/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150307A**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Chromium	33000	30	1000		µg/L	1000	3/7/2015 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R99263** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **PBW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99263** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **LCSW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	0.20	5.000	0	97.8	90	110				

Sample ID **N014760-016A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.093	0.20						0.08940	0	20	

Sample ID **N014760-016A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.08940	103	90	110				

Sample ID **N014760-016A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.110	0.20	1.000	0.08940	102	90	110	1.118	0.727	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014760-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.08260	104	90	110				

Sample ID **N014759-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.245	1.0	5.000	0	105	90	110				

Sample ID **N014777-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.103	0.20	1.000	0.07500	103	90	110				

Sample ID **N014777-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.172	0.20	1.000	0.09260	108	90	110				

Sample ID **N014777-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.104	0.20	1.000	0.08820	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014777-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.166	0.20	1.000	0.07590	109	90	110				

Sample ID **N014777-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.07850	104	90	110				

Sample ID **N014777-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.092	0.20	1.000	0.07920	101	90	110				

Sample ID **N014777-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0.06690	102	90	110				

Sample ID **N014777-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.125	0.20	1.000	0.08530	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**N014777-005A-MS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:			RunNo:	**99263**	
Client ID:	**ZZZZZZ**	Batch ID:	**R99263**	TestNo:	**EPA 218.6**			Analysis Date:	**3/2/2015**		SeqNo:	**1945396**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.112	0.20	1.000	0.06690	105	90	110				

Sample ID	**N014777-001A-MS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:			RunNo:	**99263**	
Client ID:	**ZZZZZZ**	Batch ID:	**R99263**	TestNo:	**EPA 218.6**			Analysis Date:	**3/2/2015**		SeqNo:	**1945397**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0.06730	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R99221** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **LCSW** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	249.785	10	250.0	0	99.9	85	115				

Sample ID **MB-R99221** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **PBW** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N014759-002ADUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **ZZZZZZ** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	31557.000	1000						31430	0.413	20	

Sample ID **N014696-003AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **ZZZZZZ** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2410.180	50	1250	1173	99.0	85	115				

Sample ID **N014696-003AMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99221**
Client ID: **ZZZZZZ** Batch ID: **R99221** TestNo: **SM 3500-Cr B** Analysis Date: **2/27/2015** SeqNo: **1943749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2437.330	50	1250	1173	101	85	115	2410	1.12	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-49796** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **PBW** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-49796** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **LCSW** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.002	1.0	10.00	0	100	85	115				

Sample ID **N014759-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.200	1.0	10.00	1.300	79.0	75	125				

Sample ID **N014759-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.116	1.0	10.00	1.300	78.2	75	125	9.200	0.916	20	

Sample ID **N014760-011C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.364	1.0	10.00	0	83.6	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-201
Lab Order:	N014759	**Collection Date:**	2/18/2015 10:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014759-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-201
Lab Order:	N014759	**Collection Date:**	2/18/2015 12:33:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014759-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150309B**	QC Batch: **R99346**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	30	1.1	2.5		mg/L	50	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R99346** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **PBW** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R99346** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **LCSW** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.943	0.050	1.000	0	94.3	85	115				

Sample ID **N014760-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **ZZZZZZ** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.446	0.050						0.4513	1.14	20	

Sample ID **N014760-002EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **ZZZZZZ** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.439	0.050	1.000	0.4579	98.1	75	125				

Sample ID **N014760-002EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **ZZZZZZ** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.505	0.050	1.000	0.4579	105	75	125	1.439	4.44	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-201
Lab Order:	N014759	**Collection Date:**	2/18/2015 10:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N014759-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**				PrepDate	**2/26/2015**	Analyst: **CEI**
Arsenic	2.8	0.027	0.10		µg/L	1	3/6/2015 05:24 PM
Manganese	770	0.13	2.5		µg/L	5	3/6/2015 05:29 PM
Molybdenum	67	0.76	2.5		µg/L	5	3/6/2015 05:29 PM
Selenium	ND	0.069	0.50		µg/L	1	3/6/2015 05:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Mar-15*

CLIENT: CH2M HILL
Lab Order: N014759
Project: PG&E Topock
Lab ID: N014759-002

Client Sample ID: MW-68-180-201
Collection Date: 2/18/2015 12:33:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/6/2015 06:48 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 06:48 PM
Molybdenum	46	0.15	0.50		µg/L	1	3/6/2015 06:48 PM
Selenium	15	0.069	0.50		µg/L	1	3/6/2015 06:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *10-Mar-15*

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-49796** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **PBW** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-49796** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **LCSW** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947636**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.036	0.10	10.00	0	100	85	115				
Manganese	100.130	0.50	100.0	0	100	85	115				
Molybdenum	9.741	0.50	10.00	0	97.4	85	115				
Selenium	10.529	0.50	10.00	0	105	85	115				

Sample ID **N014759-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.925	0.10	10.00	2.846	90.8	75	125				
Selenium	8.468	0.50	10.00	0.2268	82.4	75	125				

Sample ID **N014759-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	832.648	2.5	100.0	774.4	58.3	75	125				S
Molybdenum	76.798	2.5	10.00	67.11	96.8	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014759-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.055	0.10	10.00	2.846	92.1	75	125	11.93	1.08	20	
Selenium	8.583	0.50	10.00	0.2268	83.6	75	125	8.468	1.35	20	

Sample ID **N014759-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	831.430	2.5	100.0	774.4	57.0	75	125	832.6	0.146	20	S
Molybdenum	78.577	2.5	10.00	67.11	115	75	125	76.80	2.29	20	

Sample ID **N014760-011C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.933	0.10	10.00	2.391	95.4	75	125				
Manganese	86.379	0.50	100.0	0	86.4	75	125				
Molybdenum	15.024	0.50	10.00	4.368	107	75	125				
Selenium	10.637	0.50	10.00	1.417	92.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

2/18/2015 1:16:33 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-201-Q1
Turnaround Time 10 Days
Shipping Date: 1/28/2015
COC Number: GMP-201

			Container:	250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	Field	Field	NA			
			Holding Time:	28	28	180	180	180	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se,Mn	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
MW-64BR-201	2/18/2015	10:15	Water	X		X	X	X	X	N014759-1	3	
MW-68-180-201	2/18/2015	12:33	Water		X	X	X	X	X	1 -2	3	
										TOTAL NUMBER OF CONTAINERS	6	

	Signatures	Date/Time
Approved by		2-24-15
Sampled by		1518
Relinquished by		
Received by		2/24/15 1518
Relinquished by		2/24/15 1742
Received by		2/24/15 1742

Shipping Details

Method of Shipment: FedEx
On Ice: (yes) / no 1.8°C 1.8°C
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

Feb 9-19, 2015

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/24/2015	Workorder:	N014759
Rep sample Temp (Deg C):	1.8	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: HG 2/26/2015

Reviewed By: 02/26/15

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014759-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0 * 5

= 0

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N014759-002A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 314.27 *100

= 31427 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 31000

3/3/2015

SAMPLE CALCULATION

METHOD: SM 4500_NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction Method
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

Where:

A= mg/L, Nitrate/Nitrite-N instrument calculated concentration

DF= dilution factor

For **N014759-002C,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6069 * 50

= 30.345 mg/L

Reporting result in 2 significant figures,

Nitrate/Nitrite-N, mg/L = 30

3/10/2015

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014759-001B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 2.84627179934723 * 1 * (25/25)

= 2.84627179934723

Since results is less than reporting limit,

Arsenic, ug/L = 2.8

3/10/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014759
Test Method: EPA 6020
Analysis Date: 3/6/2015

Matrix: Water
Batch No.: 49796

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Se. The calculated value is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014759-001B DT 5X	Arsenic	ug/L	2.941579803	PASS	2.846271799	3.35	10
N014759-001B DT 25X	Manganese	ug/L	821.2050146	PASS	774.3948765	6.04	10
N014759-001B DT 25X	Molybdenum	ug/L	65.26715357	PASS	67.11355617	2.75	10
N014759-001B DT ~~25X~~ 5X	Selenium	ug/L	0	NA	~~0~~ 0.2268	~~0.00~~ 100	10

Note: NA - Not applicable

Mary for 3/10/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014759
Test Method: EPA 6020
Analysis Date: 3/7/2015

Matrix: Water
Batch No.: 49796

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated value is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014759-001B DT 5X	Chromium	ug/L	0.602632524	NA	1.300437227	53.66	10

Note: NA - Not applicable

ASSET Laboratories

Date: *10-Mar-15*

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N014759-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	99337
Client ID:	ZZZZZZ	Batch ID:	49796	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/6/2015	SeqNo:	1947641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.385	0.10	10.00	2.846	95.4	80	120				
Selenium	8.415	0.50	10.00	0.2268	81.9	80	120				

Sample ID	N014759-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	99337
Client ID:	ZZZZZZ	Batch ID:	49796	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/6/2015	SeqNo:	1947642

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	785.487	2.5	100.0	774.4	11.1	80	120				S
Molybdenum	75.283	2.5	10.00	67.11	81.7	80	120				

DT of Mn @25x is within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 3/10/2015

CLIENT: CH2M HILL
Work Order: N014759
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID:	**N014759-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**99341**	
Client ID:	**ZZZZZZ**	Batch ID:	**49796**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**3/7/2015**		SeqNo:	**1947876**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.337	1.0	10.00	1.300	80.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

March 12, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014760

RE: PG&E Topock 659054.01.03.02

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 24, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for SM 2540D:

RPD for Sample Duplicate (DUP) N014760-013D-DUP is outside criteria; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N014759-001B-MS and N014759-001B-MSD are outside recovery criteria for Manganese since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014760
Contract No: 2015-RMP-200

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014760-001A	C-BNS-D-200	Water	2/24/2015 11:04:00 AM	2/24/2015	3/12/2015
N014760-001B	C-BNS-D-200	Water	2/24/2015 11:04:00 AM	2/24/2015	3/12/2015
N014760-001C	C-BNS-D-200	Water	2/24/2015 11:04:00 AM	2/24/2015	3/12/2015
N014760-001D	C-BNS-D-200	Water	2/24/2015 11:04:00 AM	2/24/2015	3/12/2015
N014760-001E	C-BNS-D-200	Water	2/24/2015 11:04:00 AM	2/24/2015	3/12/2015
N014760-002A	C-I-3-D-200	Water	2/24/2015 9:30:00 AM	2/24/2015	3/12/2015
N014760-002B	C-I-3-D-200	Water	2/24/2015 9:30:00 AM	2/24/2015	3/12/2015
N014760-002C	C-I-3-D-200	Water	2/24/2015 9:30:00 AM	2/24/2015	3/12/2015
N014760-002D	C-I-3-D-200	Water	2/24/2015 9:30:00 AM	2/24/2015	3/12/2015
N014760-002E	C-I-3-D-200	Water	2/24/2015 9:30:00 AM	2/24/2015	3/12/2015
N014760-003A	C-I-3-S-200	Water	2/24/2015 9:46:00 AM	2/24/2015	3/12/2015
N014760-003B	C-I-3-S-200	Water	2/24/2015 9:46:00 AM	2/24/2015	3/12/2015
N014760-003C	C-I-3-S-200	Water	2/24/2015 9:46:00 AM	2/24/2015	3/12/2015
N014760-003D	C-I-3-S-200	Water	2/24/2015 9:46:00 AM	2/24/2015	3/12/2015
N014760-003E	C-I-3-S-200	Water	2/24/2015 9:46:00 AM	2/24/2015	3/12/2015
N014760-004A	C-MAR-S-200	Water	2/24/2015 11:56:00 AM	2/24/2015	3/12/2015
N014760-004B	C-MAR-S-200	Water	2/24/2015 11:56:00 AM	2/24/2015	3/12/2015
N014760-004C	C-MAR-S-200	Water	2/24/2015 11:56:00 AM	2/24/2015	3/12/2015
N014760-004D	C-MAR-S-200	Water	2/24/2015 11:56:00 AM	2/24/2015	3/12/2015
N014760-004E	C-MAR-S-200	Water	2/24/2015 11:56:00 AM	2/24/2015	3/12/2015
N014760-005A	C-MW-80-200	Water	2/24/2015 9:24:00 AM	2/24/2015	3/12/2015
N014760-006A	C-MW-81-200	Water	2/24/2015 10:25:00 AM	2/24/2015	3/12/2015
N014760-007A	C-R22A-D-200	Water	2/24/2015 10:32:00 AM	2/24/2015	3/12/2015
N014760-007B	C-R22A-D-200	Water	2/24/2015 10:32:00 AM	2/24/2015	3/12/2015
N014760-007C	C-R22A-D-200	Water	2/24/2015 10:32:00 AM	2/24/2015	3/12/2015
N014760-007D	C-R22A-D-200	Water	2/24/2015 10:32:00 AM	2/24/2015	3/12/2015
N014760-007E	C-R22A-D-200	Water	2/24/2015 10:32:00 AM	2/24/2015	3/12/2015
N014760-008A	C-R22A-S-200	Water	2/24/2015 10:46:00 AM	2/24/2015	3/12/2015
N014760-008B	C-R22A-S-200	Water	2/24/2015 10:46:00 AM	2/24/2015	3/12/2015

ASSET LABORATORIES
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3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014760
Contract No: 2015-RMP-200

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014760-008C	C-R22A-S-200	Water	2/24/2015 10:46:00 AM	2/24/2015	3/12/2015
N014760-008D	C-R22A-S-200	Water	2/24/2015 10:46:00 AM	2/24/2015	3/12/2015
N014760-008E	C-R22A-S-200	Water	2/24/2015 10:46:00 AM	2/24/2015	3/12/2015
N014760-009A	C-R27-D-200	Water	2/24/2015 11:26:00 AM	2/24/2015	3/12/2015
N014760-009B	C-R27-D-200	Water	2/24/2015 11:26:00 AM	2/24/2015	3/12/2015
N014760-009C	C-R27-D-200	Water	2/24/2015 11:26:00 AM	2/24/2015	3/12/2015
N014760-009D	C-R27-D-200	Water	2/24/2015 11:26:00 AM	2/24/2015	3/12/2015
N014760-009E	C-R27-D-200	Water	2/24/2015 11:26:00 AM	2/24/2015	3/12/2015
N014760-010A	C-R27-S-200	Water	2/24/2015 11:36:00 AM	2/24/2015	3/12/2015
N014760-010B	C-R27-S-200	Water	2/24/2015 11:36:00 AM	2/24/2015	3/12/2015
N014760-010C	C-R27-S-200	Water	2/24/2015 11:36:00 AM	2/24/2015	3/12/2015
N014760-010D	C-R27-S-200	Water	2/24/2015 11:36:00 AM	2/24/2015	3/12/2015
N014760-010E	C-R27-S-200	Water	2/24/2015 11:36:00 AM	2/24/2015	3/12/2015
N014760-011A	C-TAZ-D-200	Water	2/24/2015 8:56:00 AM	2/24/2015	3/12/2015
N014760-011B	C-TAZ-D-200	Water	2/24/2015 8:56:00 AM	2/24/2015	3/12/2015
N014760-011C	C-TAZ-D-200	Water	2/24/2015 8:56:00 AM	2/24/2015	3/12/2015
N014760-011D	C-TAZ-D-200	Water	2/24/2015 8:56:00 AM	2/24/2015	3/12/2015
N014760-011E	C-TAZ-D-200	Water	2/24/2015 8:56:00 AM	2/24/2015	3/12/2015
N014760-012A	C-TAZ-S-200	Water	2/24/2015 9:08:00 AM	2/24/2015	3/12/2015
N014760-012B	C-TAZ-S-200	Water	2/24/2015 9:08:00 AM	2/24/2015	3/12/2015
N014760-012C	C-TAZ-S-200	Water	2/24/2015 9:08:00 AM	2/24/2015	3/12/2015
N014760-012D	C-TAZ-S-200	Water	2/24/2015 9:08:00 AM	2/24/2015	3/12/2015
N014760-012E	C-TAZ-S-200	Water	2/24/2015 9:08:00 AM	2/24/2015	3/12/2015
N014760-013A	R63-200	Water	2/24/2015 10:10:00 AM	2/24/2015	3/12/2015
N014760-013B	R63-200	Water	2/24/2015 10:10:00 AM	2/24/2015	3/12/2015
N014760-013C	R63-200	Water	2/24/2015 10:10:00 AM	2/24/2015	3/12/2015
N014760-013D	R63-200	Water	2/24/2015 10:10:00 AM	2/24/2015	3/12/2015
N014760-013E	R63-200	Water	2/24/2015 10:10:00 AM	2/24/2015	3/12/2015
N014760-014A	RMP-AB1-200	Water	2/24/2015 12:00:00 PM	2/24/2015	3/12/2015
N014760-015A	SW1-200	Water	2/24/2015 7:20:00 AM	2/24/2015	3/12/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014760
Contract No: 2015-RMP-200

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014760-015B	SW1-200	Water	2/24/2015 7:20:00 AM	2/24/2015	3/12/2015
N014760-015C	SW1-200	Water	2/24/2015 7:20:00 AM	2/24/2015	3/12/2015
N014760-016A	SW2-200	Water	2/24/2015 7:35:00 AM	2/24/2015	3/12/2015
N014760-016B	SW2-200	Water	2/24/2015 7:35:00 AM	2/24/2015	3/12/2015
N014760-016C	SW2-200	Water	2/24/2015 7:35:00 AM	2/24/2015	3/12/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:30:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	880	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	880	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:32:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	880	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	880	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:36:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	880	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:08:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150225A** QC Batch: **R99183** PrepDate Analyst: **LR**							
Specific Conductance	890	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 7:20:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150225A** QC Batch: **R99183** PrepDate Analyst: **LR**							
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 7:35:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150225A**	QC Batch: **R99183**			PrepDate			Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	2/25/2015 03:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N014760-001D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **99183**
Client ID: **ZZZZZZ** Batch ID: **R99183** TestNo: **EPA 120.1** Analysis Date: **2/25/2015** SeqNo: **1942826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	893.000	0.10						898.0	0.558	10	

Sample ID **N014761-001C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **99183**
Client ID: **ZZZZZZ** Batch ID: **R99183** TestNo: **EPA 120.1** Analysis Date: **2/25/2015** SeqNo: **1942843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6800.000	0.10						6840	0.587	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	22	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:30:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	22	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	22	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:32:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	22	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:36:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:08:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	22	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	22	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 7:20:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 7:35:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150225B**	QC Batch: **R99184**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/25/2015 12:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	2/25/2015 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N014760-001D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **99184**
Client ID: **ZZZZZZ** Batch ID: **R99184** TestNo: **SM4500-H+B** Analysis Date: **2/25/2015** SeqNo: **1942845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.280	0.10						8.330	0.602	10	H
Temp. at time of pH Analysis	22.400	0.10						22.40	0	10	H

Sample ID **N014760-013D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **99184**
Client ID: **ZZZZZZ** Batch ID: **R99184** TestNo: **SM4500-H+B** Analysis Date: **2/25/2015** SeqNo: **1942856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.350	0.10						8.370	0.239	10	H
Temp. at time of pH Analysis	22.500	0.10						22.40	0.445	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:30:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	93	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:32:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **WETCHEM_150225G** QC Batch: **49781** PrepDate **2/25/2015** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:36:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:08:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150225G**	QC Batch: **49781**				PrepDate	**2/25/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **WETCHEM_150225I** QC Batch: **49782** PrepDate **2/25/2015** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	17	10	10		mg/L	1	2/25/2015 09:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **MB-49781** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/25/2015** RunNo: **99194**
Client ID: **PBW** Batch ID: **49781** TestNo: **SM2540D** Analysis Date: **2/25/2015** SeqNo: **1943118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **LCS-49781** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/25/2015** RunNo: **99194**
Client ID: **LCSW** Batch ID: **49781** TestNo: **SM2540D** Analysis Date: **2/25/2015** SeqNo: **1943119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	994.000	10	1000	0	99.4	80	120				

Sample ID **N014760-001D DUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/25/2015** RunNo: **99194**
Client ID: **ZZZZZZ** Batch ID: **49781** TestNo: **SM2540D** Analysis Date: **2/25/2015** SeqNo: **1943121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-49782	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/25/2015	RunNo:	99208
Client ID:	PBW	Batch ID:	49782	TestNo:	SM2540D			Analysis Date:	2/25/2015	SeqNo:	1943457

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-49782	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/25/2015	RunNo:	99208
Client ID:	LCSW	Batch ID:	49782	TestNo:	SM2540D			Analysis Date:	2/25/2015	SeqNo:	1943458

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	989.000	10	1000	0	98.9	80	120				

Sample ID	N014760-013D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/25/2015	RunNo:	99208
Client ID:	ZZZZZZ	Batch ID:	49782	TestNo:	SM2540D			Analysis Date:	2/25/2015	SeqNo:	1943460

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	18.000	10						17.00	5.71	5	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 11:53 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150307A** QC Batch: **49796**				PrepDate	**2/26/2015**		Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:30:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 12:35 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150307A** QC Batch: **49796**				PrepDate		**2/26/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 01:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 07:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150307A** QC Batch: **49796**				PrepDate		**2/26/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 01:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 01:33 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150307A** QC Batch: **49796** PrepDate **2/26/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 01:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-80-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:24:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258** PrepDate Analyst: **RB**							
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 01:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-81-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:25:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258** PrepDate Analyst: **RB**							
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 02:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:32:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 02:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150307A** QC Batch: **49796** PrepDate **2/26/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 01:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 03:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150307A** QC Batch: **49796** PrepDate **2/26/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 01:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 04:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150307A** QC Batch: **49796** PrepDate **2/26/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 02:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:36:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 04:20 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150307A** QC Batch: **49796**				PrepDate		**2/26/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 02:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 04:40 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150307A** QC Batch: **49796** PrepDate **2/26/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:08:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 01:42 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150307A** QC Batch: **49796** PrepDate **2/26/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 02:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 05:40 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150307A** QC Batch: **49796** PrepDate **2/26/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 02:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB1-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 12:00:00 PM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A**	QC Batch: **R99258**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 06:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 7:20:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150227A** QC Batch: **R99258**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	2/27/2015 06:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150307A** QC Batch: **49796**				PrepDate		**2/26/2015**	Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 7:35:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 12:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150307A** QC Batch: **49796** PrepDate **2/26/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/7/2015 02:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R99258** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **PBW** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99258** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **LCSW** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	0.20	5.000	0	97.8	90	110				

Sample ID **N014760-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.075	0.20						0.07220	0	20	

Sample ID **N014760-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.07220	101	90	110				

Sample ID **N014760-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0.07220	97.1	90	110	1.086	3.98	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014760-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.107	0.20	1.000	0.1181	98.9	90	110				

Sample ID **N014760-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.028	0.20	1.000	0.08300	94.5	90	110				

Sample ID **N014760-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.06890	106	90	110				

Sample ID **N014760-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0.06770	98.8	90	110				

Sample ID **N014760-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.143	0.20	1.000	0.08210	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014760-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.061	0.20	1.000	0.06240	99.8	90	110				

Sample ID **N014760-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0.08890	97.0	90	110				

Sample ID **N014760-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0.09470	100	90	110				

Sample ID **N014760-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1944999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.167	0.20	1.000	0.1201	105	90	110				

Sample ID **N014760-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0.07480	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R99263** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **PBW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99263** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **LCSW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	0.20	5.000	0	97.8	90	110				

Sample ID **N014760-016A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.093	0.20						0.08940	0	20	

Sample ID **N014760-016A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.08940	103	90	110				

Sample ID **N014760-016A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.110	0.20	1.000	0.08940	102	90	110	1.118	0.727	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N014760-012A-MS	**MS**	**218.6_WPGE**	**µg/L**		**99263**
Client ID: ZZZZZZ	**Batch ID: R99263**	**TestNo: EPA 218.6**		**Analysis Date: 3/2/2015**	**SeqNo: 1945364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.08260	104	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N014759-001A-MS	**MS**	**218.6_WPGE**	**µg/L**		**99263**
Client ID: ZZZZZZ	**Batch ID: R99263**	**TestNo: EPA 218.6**		**Analysis Date: 3/2/2015**	**SeqNo: 1945368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.245	1.0	5.000	0	105	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N014777-002A-MS	**MS**	**218.6_WPGE**	**µg/L**		**99263**
Client ID: ZZZZZZ	**Batch ID: R99263**	**TestNo: EPA 218.6**		**Analysis Date: 3/2/2015**	**SeqNo: 1945371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.103	0.20	1.000	0.07500	103	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N014777-006A-MS	**MS**	**218.6_WPGE**	**µg/L**		**99263**
Client ID: ZZZZZZ	**Batch ID: R99263**	**TestNo: EPA 218.6**		**Analysis Date: 3/2/2015**	**SeqNo: 1945378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.172	0.20	1.000	0.09260	108	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N014777-007A-MS	**MS**	**218.6_WPGE**	**µg/L**		**99263**
Client ID: ZZZZZZ	**Batch ID: R99263**	**TestNo: EPA 218.6**		**Analysis Date: 3/2/2015**	**SeqNo: 1945380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.104	0.20	1.000	0.08820	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014777-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.166	0.20	1.000	0.07590	109	90	110				

Sample ID **N014777-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.07850	104	90	110				

Sample ID **N014777-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.092	0.20	1.000	0.07920	101	90	110				

Sample ID **N014777-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0.06690	102	90	110				

Sample ID **N014777-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.125	0.20	1.000	0.08530	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N014777-005A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	99263
Client ID:	ZZZZZZ	Batch ID:	R99263	TestNo:	EPA 218.6			Analysis Date:	3/2/2015	SeqNo:	1945396

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.112	0.20	1.000	0.06690	105	90	110				

Sample ID	N014777-001A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	99263
Client ID:	ZZZZZZ	Batch ID:	R99263	TestNo:	EPA 218.6			Analysis Date:	3/2/2015	SeqNo:	1945397

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0.06730	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **MB-R99258** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **PBW** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99258** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **LCSW** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	0.20	5.000	0	97.8	90	110				

Sample ID **N014760-001A-DUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.075	0.20						0.07220	0	20	

Sample ID **N014760-001A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.07220	101	90	110				

Sample ID **N014760-001A-MSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0.07220	97.1	90	110	1.086	3.98	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **N014760-005A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.061	0.20	1.000	0.05060	101	90	110				

Sample ID **N014760-006A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0.04950	105	90	110				

Sample ID **N014760-014A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99258**
Client ID: **ZZZZZZ** Batch ID: **R99258** TestNo: **EPA 218.6** Analysis Date: **2/27/2015** SeqNo: **1945342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0.06740	95.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **MB-R99263** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **PBW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99263** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **LCSW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	0.20	5.000	0	97.8	90	110				

Sample ID **N014760-016A-DUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.093	0.20						0.08940	0	20	

Sample ID **N014760-016A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.08940	103	90	110				

Sample ID **N014760-016A-MSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.110	0.20	1.000	0.08940	102	90	110	1.118	0.727	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N014777-003A-MS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	99263
Client ID:	ZZZZZZ	Batch ID:	R99263	TestNo:	EPA 218.6			Analysis Date:	3/2/2015	SeqNo:	1945447

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0.08040	101	90	110				

Sample ID	N014777-004A-MS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	99263
Client ID:	ZZZZZZ	Batch ID:	R99263	TestNo:	EPA 218.6			Analysis Date:	3/2/2015	SeqNo:	1945449

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.06550	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-49796** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **PBW** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-49796** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **LCSW** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.002	1.0	10.00	0	100	85	115				

Sample ID **N014759-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.200	1.0	10.00	1.300	79.0	75	125				

Sample ID **N014759-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.116	1.0	10.00	1.300	78.2	75	125	9.200	0.916	20	

Sample ID **N014760-011C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99341**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.364	1.0	10.00	0	83.6	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:30:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150309B**	QC Batch: **R99346**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:32:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150309B**	QC Batch: **R99346**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:36:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:08:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150309B** QC Batch: **R99346** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/9/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R99346** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **PBW** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R99346** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **LCSW** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.943	0.050	1.000	0	94.3	85	115				

Sample ID **N014760-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **ZZZZZZ** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.446	0.050						0.4513	1.14	20	

Sample ID **N014760-002EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **ZZZZZZ** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.439	0.050	1.000	0.4579	98.1	75	125				

Sample ID **N014760-002EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99346**
Client ID: **ZZZZZZ** Batch ID: **R99346** TestNo: **SM4500-NO3** Analysis Date: **3/9/2015** SeqNo: **1948087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.505	0.050	1.000	0.4579	105	75	125	1.439	4.44	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 06:59 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	89	1.3	20		ug/L	1	3/10/2015 03:17 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:30:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 07:34 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	110	1.3	20		ug/L	1	3/10/2015 03:42 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 07:38 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	53	1.3	20		ug/L	1	3/10/2015 03:47 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 07:42 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	2900	1.3	20		ug/L	1	3/10/2015 04:14 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:32:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 07:47 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	55	1.3	20		ug/L	1	3/10/2015 04:19 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 07:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	49	1.3	20		ug/L	1	3/10/2015 04:23 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 07:56 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	87	1.3	20		ug/L	1	3/10/2015 04:28 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:36:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_150311D**	QC Batch: **49884**				PrepDate	**3/11/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/11/2015 06:49 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	81	1.3	20		ug/L	1	3/10/2015 04:32 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150311D**	QC Batch: **49884**				PrepDate	**3/11/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/11/2015 07:11 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	26	1.3	20		ug/L	1	3/10/2015 04:36 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:08:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	37	1.3	20		ug/L	1	3/10/2015 08:33 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	73	1.3	20		ug/L	1	3/10/2015 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 08:37 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	370	1.3	20		ug/L	1	3/10/2015 04:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-49847	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	PBW	Batch ID:	49847	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949438

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10.865	20									

Sample ID	LCS-49847	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	LCSW	Batch ID:	49847	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949440

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	111.761	20	100.0	0	112	85	115				

Sample ID	N014760-001C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49847	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949446

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.822	20	100.0	10.38	110	75	125				

Sample ID	N014760-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49847	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949447

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.396	20	100.0	10.38	109	75	125	120.8	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-49884	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/11/2015	RunNo:	99400
Client ID:	PBW	Batch ID:	49884	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/11/2015	SeqNo:	1950690

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.169	20									

Sample ID	LCS-49884	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/11/2015	RunNo:	99400
Client ID:	LCSW	Batch ID:	49884	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/11/2015	SeqNo:	1950691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	100.711	20	100.0	0	101	85	115				

Sample ID	N014760-010C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/11/2015	RunNo:	99400
Client ID:	ZZZZZZ	Batch ID:	49884	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/11/2015	SeqNo:	1950695

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	105.077	20	100.0	5.219	99.9	75	125				

Sample ID	N014760-010C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/11/2015	RunNo:	99400
Client ID:	ZZZZZZ	Batch ID:	49884	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/11/2015	SeqNo:	1950696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	104.977	20	100.0	5.219	99.8	75	125	105.1	0.0948	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-49843	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	PBW	Batch ID:	49843	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949295

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	14.942	20									

Sample ID	LCS-49843	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	LCSW	Batch ID:	49843	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949296

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.886	20	100.0	0	111	85	115				

Sample ID	N014760-001B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49843	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949300

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	198.156	20	100.0	89.35	109	75	125				

Sample ID	N014760-001B-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49843	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949301

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	189.240	20	100.0	89.35	99.9	75	125	198.2	4.60	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:04:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	3/6/2015 07:04 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 07:04 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 07:04 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	3/6/2015 07:04 PM
Selenium	1.5	0.069	0.50		µg/L	1	3/6/2015 07:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:30:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/6/2015 07:32 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 07:32 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 07:32 PM
Molybdenum	4.3	0.15	0.50		µg/L	1	3/6/2015 07:32 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/6/2015 07:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**				PrepDate	**2/26/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/6/2015 07:48 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 07:48 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 07:48 PM
Molybdenum	4.4	0.15	0.50		µg/L	1	3/6/2015 07:48 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/6/2015 07:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	3/6/2015 08:05 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 08:05 PM
Manganese	41	0.026	0.50		µg/L	1	3/6/2015 08:05 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	3/6/2015 08:05 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/6/2015 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:32:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	3/6/2015 08:49 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 08:49 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 08:49 PM
Molybdenum	4.3	0.15	0.50		µg/L	1	3/6/2015 08:49 PM
Selenium	1.5	0.069	0.50		µg/L	1	3/6/2015 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:46:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**				PrepDate	**2/26/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/6/2015 09:05 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 09:05 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 09:05 PM
Molybdenum	4.3	0.15	0.50		µg/L	1	3/6/2015 09:05 PM
Selenium	1.5	0.069	0.50		µg/L	1	3/6/2015 09:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**				PrepDate	**2/26/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/6/2015 09:22 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 09:22 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 09:22 PM
Molybdenum	4.2	0.15	0.50		µg/L	1	3/6/2015 09:22 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/6/2015 09:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 11:36:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**				PrepDate	**2/26/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/6/2015 09:38 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 09:38 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 09:38 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	3/6/2015 09:38 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/6/2015 09:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 8:56:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/6/2015 10:06 PM
Barium	140	0.15	5.0		µg/L	5	3/6/2015 10:11 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 10:06 PM
Molybdenum	4.4	0.15	0.50		µg/L	1	3/6/2015 10:06 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/6/2015 10:06 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 9:08:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	3/6/2015 10:39 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 10:39 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 10:39 PM
Molybdenum	4.3	0.15	0.50		µg/L	1	3/6/2015 10:39 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/6/2015 10:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-200
Lab Order:	N014760	**Collection Date:**	2/24/2015 10:10:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014760-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150306B**	QC Batch: **49796**			PrepDate	**2/26/2015**		Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/6/2015 11:06 PM
Barium	110	0.030	1.0		µg/L	1	3/6/2015 11:06 PM
Manganese	ND	0.026	0.50		µg/L	1	3/6/2015 11:06 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	3/6/2015 11:06 PM
Selenium	1.3	0.069	0.50		µg/L	1	3/6/2015 11:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-49796** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **PBW** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	0.054	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-49796** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **LCSW** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947636**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.036	0.10	10.00	0	100	85	115				
Barium	94.623	1.0	100.0	0	94.6	85	115				
Manganese	100.130	0.50	100.0	0	100	85	115				
Molybdenum	9.741	0.50	10.00	0	97.4	85	115				
Selenium	10.529	0.50	10.00	0	105	85	115				

Sample ID **N014759-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.925	0.10	10.00	2.846	90.8	75	125				
Selenium	8.468	0.50	10.00	0.2268	82.4	75	125				

Sample ID **N014759-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	296.373	5.0	100.0	187.7	109	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014759-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	832.648	2.5	100.0	774.4	58.3	75	125				S
Molybdenum	76.798	2.5	10.00	67.11	96.8	75	125				

Sample ID **N014759-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.055	0.10	10.00	2.846	92.1	75	125	11.93	1.08	20	
Selenium	8.583	0.50	10.00	0.2268	83.6	75	125	8.468	1.35	20	

Sample ID **N014759-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	301.050	5.0	100.0	187.7	113	75	125	296.4	1.57	20	
Manganese	831.430	2.5	100.0	774.4	57.0	75	125	832.6	0.146	20	S
Molybdenum	78.577	2.5	10.00	67.11	115	75	125	76.80	2.29	20	

Sample ID **N014760-011C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/26/2015** RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.933	0.10	10.00	2.391	95.4	75	125				
Manganese	86.379	0.50	100.0	0	86.4	75	125				
Molybdenum	15.024	0.50	10.00	4.368	107	75	125				
Selenium	10.637	0.50	10.00	1.417	92.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014760-011C-MS**	SampType:	**MS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:	**2/26/2015**	RunNo:	**99337**		
Client ID:	**ZZZZZZ**	Batch ID:	**49796**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**3/6/2015**	SeqNo:	**1947692**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Barium		258.471	5.0	100.0	135.9	123	75	125					

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

2/24/2015 2:35:34 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 659054.01.03.02
Task Order
Project 2015-RMP-200
Turnaround Time 10 Days
Shipping Date: 2/24/2015
COC Number: 3

				Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (6020A) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Specific Conductance (E120.1)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	7	7	7	28			
	DATE	TIME	Matrix												
C-BNS-D-200	2/24/2015	11:04	Water	X		X	X	X	X	X	X	X	N0147 60-1	9	
C-I-3-D-200	2/24/2015	9:30	Water	X		X	X	X	X	X	X	X	-2	9	
C-I-3-S-200	2/24/2015	9:46	Water	X		X	X	X	X	X	X	X	-3	9	
C-MAR-S-200	2/24/2015	11:56	Water	X		X	X	X	X	X	X	X	-4	9	
C-MW-80-200	2/24/2015	9:24	Water		X								-5	1	
C-MW-81-200	2/24/2015	10:25	Water		X								-6	1	
C-R22A-D-200	2/24/2015	10:32	Water	X		X	X	X	X	X	X	X	-7	9	
C-R22A-S-200	2/24/2015	10:46	Water	X		X	X	X	X	X	X	X	-8	9	
C-R27-D-200	2/24/2015	11:26	Water	X		X	X	X	X	X	X	X	-9	9	
C-R27-S-200	2/24/2015	11:36	Water	X		X	X	X	X	X	X	X	-10	9	
C-TAZ-D-200	2/24/2015	8:56	Water	X		X	X	X	X	X	X	X	-11	9	
C-TAZ-S-200	2/24/2015	9:08	Water	X		X	X	X	X	X	X	X	-12	9	
R63-200	2/24/2015	10:10	Water	X		X	X	X	X	X	X	X	-13	9	

	Signatures	Date/Time
Approved by		2-24-15 1518
Sampled by		
Relinquished by		
Received by		2/24/15 1512
Relinquished by		2/24/15 1742
Received by		2/24/15 1742

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1.6°C / 2.1°C / 1.9°C
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

Feb 24-25, 2015

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/24/2015 2:35:35 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 659054.01.03.02
Task Order
Project 2015-RMP-200
Turnaround Time 10 Days
Shipping Date: 2/24/2015
COC Number: 3

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	7	7	7	28			
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (6020A) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Specific Conductance (E120.1)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
RMP-AB1-200	2/24/2015	12:00	Water		X								N014760 -14	1	
SW1-200	2/24/2015	7:20	Water	X			X		X	X			-15	~~8~~ 7	BGL
SW2-200	2/24/2015	7:35	Water	X			X		X	X			-16	~~8~~ 7	
													TOTAL NUMBER OF CONTAINERS	~~114~~ 116	

	Signatures	Date/Time
Approved by		2-24-15 1518
Sampled by		
Relinquished by		
Received by		2/24/15 1518
Relinquished by		2/24/15 1742
Received by		2/24/15 1742

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1.6°C/2.1°C/1.9°C 1842
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

Feb 24-25, 2015

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/24/2015	Workorder:	N014760
Rep sample Temp (Deg C):	1.6/2.1/1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for pH analisys is past holding time upon receipt.

Checklist Completed By: HG 2/26/2015

Reviewed By: 02/26/15

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014760-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4491-1.4488)*1000000}{100}$$
$$= 3 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 2/27/2015

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying

B = weight in g of aluminum dish + filter disc

PF = ~~100-volume of sample used in mL~~
100 / volume of sample used in mL

Nancy for 3/11/2015

	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L
Date: 2/25/~~16~~ 15						
MB-49781	100	1.4345	1.4344	-1.0000	1.00	-1
LCS-49781	100	1.4286	1.5280	994.0000	1.00	994
N014760-001D	100	1.4488	1.4491	3.0000	1.00	3
N014760-001D DUP	100	1.4495	1.4502	7.0000	1.00	7
N014760-002D	100	1.452	1.4526	6.0000	1.00	6
N014760-003D	100	1.4442	1.4446	4.0000	1.00	4
N014760-004D	100	1.4433	1.4526	93.0000	1.00	93
N014760-007D	100	1.4511	1.4514	3.0000	1.00	3
N014760-008D	100	1.4412	1.4418	6.0000	1.00	6
N014760-009D	100	1.4398	1.4402	4.0000	1.00	4
N014760-010D	100	1.4471	1.4477	6.0000	1.00	6
N014760-011D	100	1.4321	1.4327	6.0000	1.00	6
N014760-012D	100	1.4398	1.4402	4.0000	1.00	4

Silia Ramit 2/27/2015

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying

B = weight in g of aluminum dish + filter disc

PF = ~~100-volume of sample used in mL~~

100 / volume of sample used in mL

Nancy 3/11/2015

	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L
Date: 2/25/15						
MB-49782	100	1.4427	1.4427	0.0000	1.00	0
LCS-49782	100	1.4469	1.5458	989.0000	1.00	989
N014760-013D	100	1.4407	1.4424	17.0000	1.00	17
N014760-013D	100	1.4374	1.4392	18.0000	1.00	18

Julia Ramit 2/27/2015

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014760-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0722 * 1

= 0.0722

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014760-005A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0506 * 1

= 0.0506

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

SAMPLE CALCULATION

METHOD: SM 4500_NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction Method
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

Where:

A= mg/L, Nitrate/Nitrite-N instrument calculated concentration

DF= dilution factor

For **N014760-001E,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4513 * 1

= 0.4513 mg/L

Reporting result in 2 significant figures,

Nitrate/Nitrite-N, mg/L = 0.45

3/10/2015

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014760-010C**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.245988188 * 1 * (25/25) *1000

= 245.988188

Reporting results in two significant figures,

Iron, ug/L = 250

3/12/2015

CEI / ICP-02 3/11/2015 2:14 AM

ASSET Laboratories

ICP-Metals in W a t e r

Dilution Test Summary

Work Order No.: N014760
Test Method: EPA 6010
Analysis Date: 03/10/15

Matrix: Water
Batch No.: 49847

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014760-001C DT 5X	Iron	ug/L	18.694655	NA	10.382276	80.06%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014760
Test Method: EPA 6010
Analysis Date: 03/11/15

Matrix: Groundwater
Batch No.: 49884

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution Test is not applicable for Fe. The calculated concentration was< 25X the RL. However the PS @2X passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
~~N010746-003~~B-DT 5X	Iron	ug/L	0	NA	5.2186369070	100.00%	10

N014760-010C

Note: NA - Not Applicable

3/12/2015

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N014760-001C-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **99372**
Client ID: **ZZZZZZ** Batch ID: **49847** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/10/2015** SeqNo: **1949445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	114.643	20	100.0	10.38	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N014760-010C-PS**	SampType:	**PS**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:			RunNo:	**99400**	
Client ID:	**ZZZZZZ**	Batch ID:	**49884**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**3/11/2015**		SeqNo:	**1950694**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	105.381	20	100.0	5.219	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014760-001B**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.089354539 * 1 * (25/25) *1000

= 89.354539

Reporting results in two significant figures,

Iron, ug/L = 89

Nancy 3/11/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014760
Test Method: EPA 6010
Analysis Date: 03/10/15

Matrix: Water
Batch No.: 49843

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014760-001B DT 5X	Iron	ug/L	97.56569	NA	89.354539	9.19%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID:	**N014760-001B-PS**	SampType:	**PS**	TestCode:	**6010_WPGEP**	Units:	**ug/L**	Prep Date:				RunNo:	**99372**
Client ID:	**ZZZZZZ**	Batch ID:	**49843**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**3/10/2015**			SeqNo:	**1949299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	194.134	20	100.0	89.35	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014760-001C,** the concentration in ug/L is calculated as follows:

Barium , ug/L = 114.241624639427 * 1 * (25/25)

= 114.241624639427

Reporting results in two significant figures,

Barium , ug/L = 110

Nancy 3/10/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014760
Test Method: EPA 6020
Analysis Date: 3/6/2015

Matrix: Water
Batch No.: 49796

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Se. The calculated value is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014759-001B DT 5X	Arsenic	ug/L	2.941579803	PASS	2.846271799	3.35%	10
N014759-001B DT 25X	Barium	ug/L	194.7524307	PASS	187.7272367	3.74%	10
N014759-001B DT 25X	Manganese	ug/L	821.2050146	PASS	774.3948765	6.04%	10
N014759-001B DT 25X	Molybdenum	ug/L	65.26715357	PASS	67.11355617	2.75%	10
N014759-001B DT ~~25X~~ 5x	Selenium	ug/L	0	NA	~~0~~ 0.2268	100	10

Note: NA - Not applicable

Mary 3/10/2015
for

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014760
Test Method: EPA 6020
Analysis Date: 3/7/2015

Matrix: Water
Batch No.: 49796

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated value is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014759-001B DT 5X	Chromium	ug/L	0.602632524	NA	1.300437227	53.66	10

Note: NA - Not applicable

ASSET Laboratories

Date: *10-Mar-15*

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014759-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.385	0.10	10.00	2.846	95.4	80	120				
Selenium	8.415	0.50	10.00	0.2268	81.9	80	120				

Sample ID **N014759-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **99337**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/6/2015** SeqNo: **1947642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	291.852	5.0	100.0	187.7	104	80	120				
Manganese	785.487	2.5	100.0	774.4	11.1	80	120				S
Molybdenum	75.283	2.5	10.00	67.11	81.7	80	120				

DT of Mn @25x is within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 3/10/2015

CLIENT: CH2M HILL
Work Order: N014760
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N014759-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **99341**
Client ID: **ZZZZZZ** Batch ID: **49796** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/7/2015** SeqNo: **1947876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.337	1.0	10.00	1.300	80.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

March 12, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N014777

RE: PG&E Topock 659054.01.03.02

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 25, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014777

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

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ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014777
Contract No: 2015-RMP-200

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014777-001A	C-CON-D-200	Water	2/25/2015 9:26:00 AM	2/25/2015	3/12/2015
N014777-001B	C-CON-D-200	Water	2/25/2015 9:26:00 AM	2/25/2015	3/12/2015
N014777-001C	C-CON-D-200	Water	2/25/2015 9:26:00 AM	2/25/2015	3/12/2015
N014777-001D	C-CON-D-200	Water	2/25/2015 9:26:00 AM	2/25/2015	3/12/2015
N014777-001E	C-CON-D-200	Water	2/25/2015 9:26:00 AM	2/25/2015	3/12/2015
N014777-002A	C-CON-S-200	Water	2/25/2015 9:40:00 AM	2/25/2015	3/12/2015
N014777-002B	C-CON-S-200	Water	2/25/2015 9:40:00 AM	2/25/2015	3/12/2015
N014777-002C	C-CON-S-200	Water	2/25/2015 9:40:00 AM	2/25/2015	3/12/2015
N014777-002D	C-CON-S-200	Water	2/25/2015 9:40:00 AM	2/25/2015	3/12/2015
N014777-002E	C-CON-S-200	Water	2/25/2015 9:40:00 AM	2/25/2015	3/12/2015
N014777-003A	C-MW-82-200	Water	2/25/2015 8:14:00 AM	2/25/2015	3/12/2015
N014777-004A	C-MW-83-200	Water	2/25/2015 11:06:00 AM	2/25/2015	3/12/2015
N014777-005A	C-NR1-D-200	Water	2/25/2015 10:05:00 AM	2/25/2015	3/12/2015
N014777-005B	C-NR1-D-200	Water	2/25/2015 10:05:00 AM	2/25/2015	3/12/2015
N014777-005C	C-NR1-D-200	Water	2/25/2015 10:05:00 AM	2/25/2015	3/12/2015
N014777-005D	C-NR1-D-200	Water	2/25/2015 10:05:00 AM	2/25/2015	3/12/2015
N014777-005E	C-NR1-D-200	Water	2/25/2015 10:05:00 AM	2/25/2015	3/12/2015
N014777-006A	C-NR1-S-200	Water	2/25/2015 10:17:00 AM	2/25/2015	3/12/2015
N014777-006B	C-NR1-S-200	Water	2/25/2015 10:17:00 AM	2/25/2015	3/12/2015
N014777-006C	C-NR1-S-200	Water	2/25/2015 10:17:00 AM	2/25/2015	3/12/2015
N014777-006D	C-NR1-S-200	Water	2/25/2015 10:17:00 AM	2/25/2015	3/12/2015
N014777-006E	C-NR1-S-200	Water	2/25/2015 10:17:00 AM	2/25/2015	3/12/2015
N014777-007A	C-NR3-D-200	Water	2/25/2015 10:42:00 AM	2/25/2015	3/12/2015
N014777-007B	C-NR3-D-200	Water	2/25/2015 10:42:00 AM	2/25/2015	3/12/2015
N014777-007C	C-NR3-D-200	Water	2/25/2015 10:42:00 AM	2/25/2015	3/12/2015
N014777-007D	C-NR3-D-200	Water	2/25/2015 10:42:00 AM	2/25/2015	3/12/2015
N014777-007E	C-NR3-D-200	Water	2/25/2015 10:42:00 AM	2/25/2015	3/12/2015
N014777-008A	C-NR3-S-200	Water	2/25/2015 10:55:00 AM	2/25/2015	3/12/2015
N014777-008B	C-NR3-S-200	Water	2/25/2015 10:55:00 AM	2/25/2015	3/12/2015

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CLIENT: CH2M HILL
Project: PG&E Topock 659054.01.03.02
Lab Order: N014777
Contract No: 2015-RMP-200

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N014777-008C	C-NR3-S-200	Water	2/25/2015 10:55:00 AM	2/25/2015	3/12/2015
N014777-008D	C-NR3-S-200	Water	2/25/2015 10:55:00 AM	2/25/2015	3/12/2015
N014777-008E	C-NR3-S-200	Water	2/25/2015 10:55:00 AM	2/25/2015	3/12/2015
N014777-009A	C-NR4-D-200	Water	2/25/2015 11:13:00 AM	2/25/2015	3/12/2015
N014777-009B	C-NR4-D-200	Water	2/25/2015 11:13:00 AM	2/25/2015	3/12/2015
N014777-009C	C-NR4-D-200	Water	2/25/2015 11:13:00 AM	2/25/2015	3/12/2015
N014777-009D	C-NR4-D-200	Water	2/25/2015 11:13:00 AM	2/25/2015	3/12/2015
N014777-009E	C-NR4-D-200	Water	2/25/2015 11:13:00 AM	2/25/2015	3/12/2015
N014777-010A	C-NR4-S-200	Water	2/25/2015 11:26:00 AM	2/25/2015	3/12/2015
N014777-010B	C-NR4-S-200	Water	2/25/2015 11:26:00 AM	2/25/2015	3/12/2015
N014777-010C	C-NR4-S-200	Water	2/25/2015 11:26:00 AM	2/25/2015	3/12/2015
N014777-010D	C-NR4-S-200	Water	2/25/2015 11:26:00 AM	2/25/2015	3/12/2015
N014777-010E	C-NR4-S-200	Water	2/25/2015 11:26:00 AM	2/25/2015	3/12/2015
N014777-011A	R-19-200	Water	2/25/2015 9:00:00 AM	2/25/2015	3/12/2015
N014777-011B	R-19-200	Water	2/25/2015 9:00:00 AM	2/25/2015	3/12/2015
N014777-011C	R-19-200	Water	2/25/2015 9:00:00 AM	2/25/2015	3/12/2015
N014777-011D	R-19-200	Water	2/25/2015 9:00:00 AM	2/25/2015	3/12/2015
N014777-011E	R-19-200	Water	2/25/2015 9:00:00 AM	2/25/2015	3/12/2015
N014777-012A	R-28-200	Water	2/25/2015 8:45:00 AM	2/25/2015	3/12/2015
N014777-012B	R-28-200	Water	2/25/2015 8:45:00 AM	2/25/2015	3/12/2015
N014777-012C	R-28-200	Water	2/25/2015 8:45:00 AM	2/25/2015	3/12/2015
N014777-012D	R-28-200	Water	2/25/2015 8:45:00 AM	2/25/2015	3/12/2015
N014777-012E	R-28-200	Water	2/25/2015 8:45:00 AM	2/25/2015	3/12/2015
N014777-013A	RMP-AB2-200	Water	2/25/2015 11:50:00 AM	2/25/2015	3/12/2015
N014777-014A	RRB-200	Water	2/25/2015 8:26:00 AM	2/25/2015	3/12/2015
N014777-014B	RRB-200	Water	2/25/2015 8:26:00 AM	2/25/2015	3/12/2015
N014777-014C	RRB-200	Water	2/25/2015 8:26:00 AM	2/25/2015	3/12/2015
N014777-014D	RRB-200	Water	2/25/2015 8:26:00 AM	2/25/2015	3/12/2015
N014777-014E	RRB-200	Water	2/25/2015 8:26:00 AM	2/25/2015	3/12/2015

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**			PrepDate			Analyst: **LR**
Specific Conductance	870	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:40:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**			PrepDate			Analyst: **LR**
Specific Conductance	860	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:05:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**			PrepDate			Analyst: **LR**
Specific Conductance	880	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:17:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**			PrepDate			Analyst: **LR**
Specific Conductance	860	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:42:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**			PrepDate			Analyst: **LR**
Specific Conductance	870	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:55:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**			PrepDate			Analyst: **LR**
Specific Conductance	870	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:13:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**			PrepDate			Analyst: **LR**
Specific Conductance	870	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**			PrepDate			Analyst: **LR**
Specific Conductance	870	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:00:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**				PrepDate		Analyst: **LR**
Specific Conductance	870	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**				PrepDate		Analyst: **LR**
Specific Conductance	880	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150226D**	QC Batch: **R99217**				PrepDate		Analyst: **LR**
Specific Conductance	880	0.10	0.10		umhos/cm	1	2/26/2015 04:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N014777-001D DUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:				RunNo:	**99217**	
Client ID:	**ZZZZZZ**	Batch ID:	**R99217**	TestNo:	**EPA 120.1**			Analysis Date:	**2/26/2015**			SeqNo:	**1943652**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	875.000	0.10						874.0	0.114	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:40:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:05:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:17:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	21	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:42:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:55:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:13:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	21	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:00:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150226C**	QC Batch: **R99215**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/26/2015 03:00 PM
Temp. at time of pH Analysis	21	0.10	0.10	H	°C	1	2/26/2015 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N014777-001D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **99215**
Client ID: **ZZZZZZ** Batch ID: **R99215** TestNo: **SM4500-H+B** Analysis Date: **2/26/2015** SeqNo: **1943572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.360	0.10						8.360	0	10	H
Temp. at time of pH Analysis	20.200	0.10						20.20	0	10	H

Sample ID **N014785-001B DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **99215**
Client ID: **ZZZZZZ** Batch ID: **R99215** TestNo: **SM4500-H+B** Analysis Date: **2/26/2015** SeqNo: **1943591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	5.570	0.10						5.680	1.96	10	H
Temp. at time of pH Analysis	20.600	0.10						20.70	0.484	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**			PrepDate	**2/26/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:40:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**				PrepDate	**2/26/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:05:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**				PrepDate	**2/26/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:17:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**				PrepDate	**2/26/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:42:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**				PrepDate	**2/26/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:55:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **WETCHEM_150226A** QC Batch: **49795** PrepDate **2/26/2015** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:13:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**				PrepDate	**2/26/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**				PrepDate	**2/26/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:00:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**			PrepDate	**2/26/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226A**	QC Batch: **49795**				PrepDate	**2/26/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150226B**	QC Batch: **49798**				PrepDate	**2/26/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/26/2015 09:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **MB-49795** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/26/2015** RunNo: **99210**
Client ID: **PBW** Batch ID: **49795** TestNo: **SM2540D** Analysis Date: **2/26/2015** SeqNo: **1943464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **LCS-49795** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/26/2015** RunNo: **99210**
Client ID: **LCSW** Batch ID: **49795** TestNo: **SM2540D** Analysis Date: **2/26/2015** SeqNo: **1943465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	913.000	10	1000	0	91.3	80	120				

Sample ID **N014777-001D DUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/26/2015** RunNo: **99210**
Client ID: **ZZZZZZ** Batch ID: **49795** TestNo: **SM2540D** Analysis Date: **2/26/2015** SeqNo: **1943467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-49798	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/26/2015	RunNo:	99211
Client ID:	PBW	Batch ID:	49798	TestNo:	SM2540D			Analysis Date:	2/26/2015	SeqNo:	1943478

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	LCS-49798	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/26/2015	RunNo:	99211
Client ID:	LCSW	Batch ID:	49798	TestNo:	SM2540D			Analysis Date:	2/26/2015	SeqNo:	1943479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	940.000	10	1000	0	94.0	80	120				

Sample ID	N014777-014D DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/26/2015	RunNo:	99211
Client ID:	ZZZZZZ	Batch ID:	49798	TestNo:	SM2540D			Analysis Date:	2/26/2015	SeqNo:	1943482

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 02:46 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:40:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 03:06 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-82-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:14:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A**	QC Batch: **R99263**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 09:04 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-83-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:06:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A**	QC Batch: **R99263**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 03:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:05:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 08:34 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 12:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:17:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 04:55 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 12:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:42:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 05:15 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 01:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:55:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 05:34 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:13:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 05:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 06:34 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 01:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:00:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 06:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150303A** QC Batch: **R99265** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/3/2015 02:09 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 01:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB2-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:50:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150303A**	QC Batch: **R99265**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/3/2015 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150302A** QC Batch: **R99263** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.016	0.20		µg/L	1	3/2/2015 07:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150309A** QC Batch: **49858** PrepDate **3/6/2015**							Analyst: **CEI**
Chromium	ND	0.030	1.0		µg/L	1	3/9/2015 01:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R99263** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **PBW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99263** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **LCSW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	0.20	5.000	0	97.8	90	110				

Sample ID **N014760-016A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.093	0.20						0.08940	0	20	

Sample ID **N014760-016A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.08940	103	90	110				

Sample ID **N014760-016A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.110	0.20	1.000	0.08940	102	90	110	1.118	0.727	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014760-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.08260	104	90	110				

Sample ID **N014759-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.245	1.0	5.000	0	105	90	110				

Sample ID **N014777-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.103	0.20	1.000	0.07500	103	90	110				

Sample ID **N014777-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.172	0.20	1.000	0.09260	108	90	110				

Sample ID **N014777-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.104	0.20	1.000	0.08820	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N014777-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.166	0.20	1.000	0.07590	109	90	110				

Sample ID **N014777-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.07850	104	90	110				

Sample ID **N014777-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.092	0.20	1.000	0.07920	101	90	110				

Sample ID **N014777-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0.06690	102	90	110				

Sample ID **N014777-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.125	0.20	1.000	0.08530	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N014777-005A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	99263
Client ID:	ZZZZZZ	Batch ID:	R99263	TestNo:	EPA 218.6			Analysis Date:	3/2/2015	SeqNo:	1945396

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.112	0.20	1.000	0.06690	105	90	110				

Sample ID	N014777-001A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	99263
Client ID:	ZZZZZZ	Batch ID:	R99263	TestNo:	EPA 218.6			Analysis Date:	3/2/2015	SeqNo:	1945397

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0.06730	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R99265	MBLK	218.6_WPGE	µg/L		99265
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
PBW	R99265	EPA 218.6		3/3/2015	1945482

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R99265	LCS	218.6_WPGE	µg/L		99265
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
LCSW	R99265	EPA 218.6		3/3/2015	1945483

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.889	0.20	5.000	0	97.8	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N014846-001A-DUP	DUP	218.6_WPGE	µg/L		99265
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R99265	EPA 218.6		3/3/2015	1945485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.057	1.0						13.91	1.03	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N014846-001A-MS	MS	218.6_WPGE	µg/L		99265
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R99265	EPA 218.6		3/3/2015	1945486

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	19.195	1.0	5.000	13.91	106	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N014846-001A-MSD	MSD	218.6_WPGE	µg/L		99265
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R99265	EPA 218.6		3/3/2015	1945487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	19.097	1.0	5.000	13.91	104	90	110	19.19	0.512	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**N014777-012A-MS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:			RunNo:	**99265**	
Client ID:	**ZZZZZZ**	Batch ID:	**R99265**	TestNo:	**EPA 218.6**			Analysis Date:	**3/3/2015**		SeqNo:	**1945494**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.107	0.20	1.000	0.09860	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **MB-R99263** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **PBW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99263** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **LCSW** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	0.20	5.000	0	97.8	90	110				

Sample ID **N014760-016A-DUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.093	0.20						0.08940	0	20	

Sample ID **N014760-016A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.118	0.20	1.000	0.08940	103	90	110				

Sample ID **N014760-016A-MSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99263**
Client ID: **ZZZZZZ** Batch ID: **R99263** TestNo: **EPA 218.6** Analysis Date: **3/2/2015** SeqNo: **1945437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.110	0.20	1.000	0.08940	102	90	110	1.118	0.727	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N014777-003A-MS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	99263
Client ID:	ZZZZZZ	Batch ID:	R99263	TestNo:	EPA 218.6			Analysis Date:	3/2/2015	SeqNo:	1945447

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0.08040	101	90	110				

Sample ID	N014777-004A-MS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	99263
Client ID:	ZZZZZZ	Batch ID:	R99263	TestNo:	EPA 218.6			Analysis Date:	3/2/2015	SeqNo:	1945449

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.06550	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **MB-R99265** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99265**
Client ID: **PBW** Batch ID: **R99265** TestNo: **EPA 218.6** Analysis Date: **3/3/2015** SeqNo: **1945505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99265** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99265**
Client ID: **LCSW** Batch ID: **R99265** TestNo: **EPA 218.6** Analysis Date: **3/3/2015** SeqNo: **1945506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.889	0.20	5.000	0	97.8	90	110				

Sample ID **N014846-001A-DUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99265**
Client ID: **ZZZZZZ** Batch ID: **R99265** TestNo: **EPA 218.6** Analysis Date: **3/3/2015** SeqNo: **1945508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.057	1.0						13.91	1.03	20	

Sample ID **N014846-001A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99265**
Client ID: **ZZZZZZ** Batch ID: **R99265** TestNo: **EPA 218.6** Analysis Date: **3/3/2015** SeqNo: **1945509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	19.195	1.0	5.000	13.91	106	90	110				

Sample ID **N014846-001A-MSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99265**
Client ID: **ZZZZZZ** Batch ID: **R99265** TestNo: **EPA 218.6** Analysis Date: **3/3/2015** SeqNo: **1945510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	19.097	1.0	5.000	13.91	104	90	110	19.19	0.512	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	**N014777-013A-MS**	SampType:	**MS**	TestCode:	**218.6_WU_P**	Units:	**µg/L**	Prep Date:				RunNo:	**99265**
Client ID:	**ZZZZZZ**	Batch ID:	**R99265**	TestNo:	**EPA 218.6**			Analysis Date:	**3/3/2015**			SeqNo:	**1945519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.125	0.20	1.000	0.09120	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-49858	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/6/2015	RunNo:	99347
Client ID:	PBW	Batch ID:	49858	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/9/2015	SeqNo:	1948108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.064	1.0									

Sample ID	LCS-49858	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/6/2015	RunNo:	99347
Client ID:	LCSW	Batch ID:	49858	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/9/2015	SeqNo:	1948109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.960	1.0	10.00	0	99.6	85	115				

Sample ID	N014857-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/6/2015	RunNo:	99347
Client ID:	ZZZZZZ	Batch ID:	49858	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/9/2015	SeqNo:	1948113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.978	1.0	10.00	3.383	95.9	75	125				

Sample ID	N014857-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/6/2015	RunNo:	99347
Client ID:	ZZZZZZ	Batch ID:	49858	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/9/2015	SeqNo:	1948114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.859	1.0	10.00	3.383	94.8	75	125	12.98	0.919	20	

Sample ID	N014847-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/6/2015	RunNo:	99347
Client ID:	ZZZZZZ	Batch ID:	49858	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/9/2015	SeqNo:	1948121

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	31.535	1.0	10.00	21.56	99.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:40:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150310C**	QC Batch: **R99360**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:05:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:17:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:42:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:55:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:13:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:00:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150310C** QC Batch: **R99360** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	3/10/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R99360** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99360**
Client ID: **PBW** Batch ID: **R99360** TestNo: **SM4500-NO3** Analysis Date: **3/10/2015** SeqNo: **1948570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.024	0.050									

Sample ID **LCS-R99360** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99360**
Client ID: **LCSW** Batch ID: **R99360** TestNo: **SM4500-NO3** Analysis Date: **3/10/2015** SeqNo: **1948571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.977	0.050	1.000	0	97.7	85	115				

Sample ID **N014777-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99360**
Client ID: **ZZZZZZ** Batch ID: **R99360** TestNo: **SM4500-NO3** Analysis Date: **3/10/2015** SeqNo: **1948573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.433	0.050						0.4485	3.52	20	

Sample ID **N014777-002EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99360**
Client ID: **ZZZZZZ** Batch ID: **R99360** TestNo: **SM4500-NO3** Analysis Date: **3/10/2015** SeqNo: **1948575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.470	0.050	1.000	0.4555	101	75	125				

Sample ID **N014777-002EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99360**
Client ID: **ZZZZZZ** Batch ID: **R99360** TestNo: **SM4500-NO3** Analysis Date: **3/10/2015** SeqNo: **1948576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.449	0.050	1.000	0.4555	99.4	75	125	1.470	1.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 08:41 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	67	1.3	20		ug/L	1	3/10/2015 04:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:40:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 08:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	68	1.3	20		ug/L	1	3/10/2015 04:54 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:05:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 08:50 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	74	1.3	20		ug/L	1	3/10/2015 05:08 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:17:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 08:55 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	68	1.3	20		ug/L	1	3/10/2015 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:42:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 08:59 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	78	1.3	20		ug/L	1	3/10/2015 05:17 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:55:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 09:03 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	51	1.3	20		ug/L	1	3/10/2015 05:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:13:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 09:18 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	58	1.3	20		ug/L	1	3/10/2015 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 09:22 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	43	1.3	20		ug/L	1	3/10/2015 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:00:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49847**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 09:26 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49843**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	40	1.3	20		ug/L	1	3/10/2015 05:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49850**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 09:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49844**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	35	1.3	20		ug/L	1	3/10/2015 06:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49850**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	ND	1.3	20		ug/L	1	3/10/2015 10:16 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150310A**	QC Batch: **49844**				PrepDate	**3/5/2015**	Analyst: **CEI**
Iron	43	1.3	20		ug/L	1	3/10/2015 06:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-49847	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	PBW	Batch ID:	49847	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949438

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10.865	20									

Sample ID	LCS-49847	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	LCSW	Batch ID:	49847	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949440

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	111.761	20	100.0	0	112	85	115				

Sample ID	N014760-001C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49847	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949446

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.822	20	100.0	10.38	110	75	125				

Sample ID	N014760-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49847	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949447

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.396	20	100.0	10.38	109	75	125	120.8	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-49850	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	PBW	Batch ID:	49850	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	6.576	20									

Sample ID	LCS-49850	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	LCSW	Batch ID:	49850	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949475

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	88.393	20	100.0	0	88.4	85	115				

Sample ID	N014777-012C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49850	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.634	20	100.0	6.532	104	75	125				

Sample ID	N014777-012C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49850	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.744	20	100.0	6.532	102	75	125	110.6	1.72	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-49843	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	PBW	Batch ID:	49843	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949295

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	14.942	20									

Sample ID	LCS-49843	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	LCSW	Batch ID:	49843	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949296

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.886	20	100.0	0	111	85	115				

Sample ID	N014760-001B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49843	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949300

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	198.156	20	100.0	89.35	109	75	125				

Sample ID	N014760-001B-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49843	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949301

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	189.240	20	100.0	89.35	99.9	75	125	198.2	4.60	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-49844	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	PBW	Batch ID:	49844	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949326

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	7.777	20									

Sample ID	LCS-49844	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	LCSW	Batch ID:	49844	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	104.674	20	100.0	0	105	85	115				

Sample ID	N014777-012B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49844	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949334

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	149.274	20	100.0	34.89	114	75	125				

Sample ID	N014777-012B-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	3/5/2015	RunNo:	99372
Client ID:	ZZZZZZ	Batch ID:	49844	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/10/2015	SeqNo:	1949335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	147.867	20	100.0	34.89	113	75	125	149.3	0.947	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/9/2015 12:42 PM
Barium	130	0.030	1.0		µg/L	1	3/9/2015 12:42 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 12:42 PM
Molybdenum	4.8	0.15	0.50		µg/L	1	3/9/2015 12:42 PM
Selenium	1.5	0.069	0.50		µg/L	1	3/11/2015 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:40:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/9/2015 12:48 PM
Barium	130	0.030	1.0		µg/L	1	3/9/2015 12:48 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 12:48 PM
Molybdenum	4.8	0.15	0.50		µg/L	1	3/9/2015 12:48 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/9/2015 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:05:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	3/9/2015 12:54 PM
Barium	130	0.030	1.0		µg/L	1	3/9/2015 12:54 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 12:54 PM
Molybdenum	4.9	0.15	0.50		µg/L	1	3/9/2015 12:54 PM
Selenium	1.5	0.069	0.50		µg/L	1	3/9/2015 12:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:17:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/9/2015 12:59 PM
Barium	130	0.030	1.0		µg/L	1	3/9/2015 12:59 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 12:59 PM
Molybdenum	4.8	0.15	0.50		µg/L	1	3/9/2015 12:59 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/9/2015 12:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:42:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/9/2015 01:05 PM
Barium	130	0.030	1.0		µg/L	1	3/9/2015 01:05 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 01:05 PM
Molybdenum	4.8	0.15	0.50		µg/L	1	3/9/2015 01:05 PM
Selenium	1.5	0.069	0.50		µg/L	1	3/9/2015 01:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 10:55:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.5	0.027	0.10		µg/L	1	3/9/2015 01:10 PM
Barium	130	0.030	1.0		µg/L	1	3/9/2015 01:10 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 01:10 PM
Molybdenum	5.0	0.15	0.50		µg/L	1	3/9/2015 01:10 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/9/2015 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:13:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	3/9/2015 01:16 PM
Barium	120	0.030	1.0		µg/L	1	3/9/2015 01:16 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 01:16 PM
Molybdenum	4.5	0.15	0.50		µg/L	1	3/9/2015 01:16 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/9/2015 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 11:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/9/2015 01:22 PM
Barium	130	0.030	1.0		µg/L	1	3/9/2015 01:22 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 01:22 PM
Molybdenum	4.9	0.15	0.50		µg/L	1	3/9/2015 01:22 PM
Selenium	1.5	0.069	0.50		µg/L	1	3/9/2015 01:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 9:00:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.4	0.027	0.10		µg/L	1	3/9/2015 01:38 PM
Barium	130	0.030	1.0		µg/L	1	3/9/2015 01:38 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 01:38 PM
Molybdenum	4.9	0.15	0.50		µg/L	1	3/9/2015 01:38 PM
Selenium	1.4	0.069	0.50		µg/L	1	3/9/2015 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:45:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.3	0.027	0.10		µg/L	1	3/9/2015 01:44 PM
Barium	120	0.030	1.0		µg/L	1	3/9/2015 01:44 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 01:44 PM
Molybdenum	4.6	0.15	0.50		µg/L	1	3/9/2015 01:44 PM
Selenium	1.3	0.069	0.50		µg/L	1	3/9/2015 01:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-200
Lab Order:	N014777	**Collection Date:**	2/25/2015 8:26:00 AM
Project:	PG&E Topock 659054.01.03.02	**Matrix:**	WATER
Lab ID:	N014777-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150309A**	QC Batch: **49858**				PrepDate	**3/6/2015**	Analyst: **CEI**
Arsenic	2.6	0.027	0.10		µg/L	1	3/9/2015 01:49 PM
Barium	140	0.030	1.0		µg/L	1	3/9/2015 01:49 PM
Manganese	ND	0.026	0.50		µg/L	1	3/9/2015 01:49 PM
Molybdenum	5.2	0.15	0.50		µg/L	1	3/9/2015 01:49 PM
Selenium	1.7	0.069	0.50		µg/L	1	3/9/2015 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *12-Mar-15*

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-49858** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/6/2015** RunNo: **99347**
Client ID: **PBW** Batch ID: **49858** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/9/2015** SeqNo: **1948204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-49858** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/6/2015** RunNo: **99347**
Client ID: **LCSW** Batch ID: **49858** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/9/2015** SeqNo: **1948205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.366	0.10	10.00	0	104	85	115				
Barium	108.124	1.0	100.0	0	108	85	115				
Manganese	101.246	0.50	100.0	0	101	85	115				
Molybdenum	10.596	0.50	10.00	0	106	85	115				
Selenium	9.369	0.50	10.00	0	93.7	85	115				

Sample ID **N014857-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/6/2015** RunNo: **99347**
Client ID: **ZZZZZZ** Batch ID: **49858** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/9/2015** SeqNo: **1948209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.668	0.10	10.00	4.813	98.6	75	125				
Barium	150.267	1.0	100.0	51.17	99.1	75	125				
Manganese	94.678	0.50	100.0	0	94.7	75	125				
Molybdenum	16.091	0.50	10.00	5.124	110	75	125				
Selenium	9.698	0.50	10.00	0.6370	90.6	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N014857-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/6/2015** RunNo: **99347**
Client ID: **ZZZZZZ** Batch ID: **49858** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/9/2015** SeqNo: **1948210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.801	0.10	10.00	4.813	99.9	75	125	14.67	0.904	20	
Barium	150.954	1.0	100.0	51.17	99.8	75	125	150.3	0.456	20	
Manganese	94.053	0.50	100.0	0	94.1	75	125	94.68	0.662	20	
Molybdenum	16.209	0.50	10.00	5.124	111	75	125	16.09	0.729	20	
Selenium	9.946	0.50	10.00	0.6370	93.1	75	125	9.698	2.52	20	

Sample ID **N014847-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/6/2015** RunNo: **99347**
Client ID: **ZZZZZZ** Batch ID: **49858** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/9/2015** SeqNo: **1948217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.172	0.10	10.00	0.7931	104	75	125				
Barium	154.668	1.0	100.0	48.82	106	75	125				
Manganese	93.932	0.50	100.0	0	93.9	75	125				
Molybdenum	12.809	0.50	10.00	1.218	116	75	125				
Selenium	9.903	0.50	10.00	0.1825	97.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

2/25/2015 2:13:19 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 659054.01.03.02
Task Order
Project 2015-RMP-200
Turnaround Time 10 Days
Shipping Date: 2/19/2015
COC Number: RMP-200

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	7	7	7	28			
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (6020A) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Specific Conductance (E120.1)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
C-CON-D-200	2/25/2015	9:26	Water	X		X	X	X	X	X	X	X	N014777-1	9	
C-CON-S-200	2/25/2015	9:40	Water	X		X	X	X	X	X	X	X	-2	9	
C-MW-82-200	2/25/2015	8:14	Water		X								-3	1	
C-MW-83-200	2/25/2015	11:06	Water		X								-4	1	
C-NR1-D-200	2/25/2015	10:05	Water	X		X	X	X	X	X	X	X	-5	9	
C-NR1-S-200	2/25/2015	10:17	Water	X		X	X	X	X	X	X	X	-6	9	
C-NR3-D-200	2/25/2015	10:42	Water	X		X	X	X	X	X	X	X	-7	9	
C-NR3-S-200	2/25/2015	10:55	Water	X		X	X	X	X	X	X	X	-8	9	
C-NR4-D-200	2/25/2015	11:13	Water	X		X	X	X	X	X	X	X	-9	9	
C-NR4-S-200	2/25/2015	11:26	Water	X		X	X	X	X	X	X	X	-10	9	
R-19-200	2/25/2015	9:00	Water	X		X	X	X	X	X	X	X	-11	9	
R-28-200	2/25/2015	8:45	Water	X		X	X	X	X	X	X	X	-12	9	
RMP-AB2-200	2/25/2015	11:50	Water		X								-13	1	

Signatures		Date/Time
Approved by		2-25-15 1430
Sampled by		
Relinquished by		
Received by		2/25/15 @1430
Relinquished by		2/25/15 @1730
Received by		2/25/15 @ 1730

Shipping Details

Method of Shipment: FedEx
On Ice: (yes) no 1.2, 3.1, 2.6 °C
Airbill No: IR#2 ICE
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

Feb 24-25, 2015

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/25/2015 2:13:22 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number 659054.01.03.02
Task Order
Project 2015-RMP-200
Turnaround Time 10 Days
Shipping Date: 2/19/2015
COC Number: RMP-200

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	125 ml Poly		
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	None	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C		
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA		
			Holding Time:	28	28	180	180	180	7	7	7	28		
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (6020A) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo,Ba	Specific Conductance (E120.1)	PH (SM4500HB)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate		Number of Containers	COMMENTS
RRB-200	2/25/2015	8:26	Water	X		X	X	X	X	X	X	X	N014777-14	9	
													TOTAL NUMBER OF CONTAINERS	102	

	Signatures	Date/Time
Approved by		2-25-15 1430
Sampled by		
Relinquished by		2/25/15 @ 1430
Received by		2/25/15 @ 1730
Relinquished by		2/25/15 @ 1730
Received by		2/25/15 @ 1730

Shipping Details

Method of Shipment: FedEx
On Ice: yes no 1.2, 3.1, 2.6°C
Airbill No: 1 ice
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

Feb 24-25, 2015

Where provided with multiple Cr6 and CrT bottles, please analze one bottle, and hold the other bottles.

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/25/2015	Workorder:	N014777
Rep sample Temp (Deg C):	1.2/3.1/2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☑	NA ☐

Comments: Sample for pH was past holding time upon receipt.

Checklist Completed B HG 3/2/2015

Reviewed By: _____

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N014777-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4461-1.4458)*1000000}{100}$$
$$= 3 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 2/27/2015

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying

B = weight in g of aluminum dish + filter disc

PF = ~~100 volume of sample used in mL~~

100 / volume of sample used in mL

Nancy 3/10/2015

	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L
Date: 2/26/15						
MB-49795	100	1.4356	1.4358	2.0000	1.00	2
LCS-49795	100	1.4239	1.5152	913.0000	1.00	913
N014777-001D	100	1.4458	1.4461	3.0000	1.00	3
N014777-001D DUP	100	1.4352	1.4355	3.0000	1.00	3
N014777-002D	100	1.4436	1.4442	6.0000	1.00	6
N014777-005D	100	1.4408	1.4412	4.0000	1.00	4
N014777-006D	100	1.4307	1.4311	4.0000	1.00	4
N014777-007D	100	1.4377	1.4381	4.0000	1.00	4
N014777-008D	100	1.435	1.4354	4.0000	1.00	4
N014777-009D	100	1.4237	1.4243	6.0000	1.00	6
N014777-010D	100	1.4329	1.4332	3.0000	1.00	3
N014777-011D	100	1.4371	1.4374	3.0000	1.00	3
N014777-012D	100	1.4406	1.4411	5.0000	1.00	5

Julia Ramit 2/27/2015

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = **weight in g of aluminum dish + filter disc + residue after drying**

B = **weight in g of aluminum dish + filter disc**

PF = ~~**100-volume of sample used in mL**~~

100 / volume of sample used in mL

Nancy for 3/10/2015

	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L
Date: 2/26/15						
MB-49798	100	1.4397	1.4398	1.0000	1.00	1
LCS-49798	100	1.4277	1.5217	940.0000	1.00	940
N014760-004D	100	1.4302	1.4393	91.0000	1.00	91
N014777-014D	100	1.4425	1.4428	3.0000	1.00	3
N014777-014D DUP	100	1.4347	1.4351	4.0000	1.00	4

Julia Ramit 2/27/2015

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014777-014A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0853 * 1

= 0.0853

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N014777-003A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.0804 * 1

= 0.0804

Since PQL is 0.20 µg/L,

Cr^{+6}, µg/L = ND

SAMPLE CALCULATION

METHOD: SM 4500_NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction Method
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

Where:

A= mg/L, Nitrate/Nitrite-N instrument calculated concentration

DF= dilution factor

For **N014777-001E,** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4485 * 1

= 0.4485 mg/L

Reporting result in 2 significant figures,

Nitrate/Nitrite-N, mg/L = 0.45

3/11/2015

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014777-010C**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.010185442 * 1 * (25/25) *1000

= 10.185442

Reporting results in two significant figures,

Iron, ug/L = 10

But since PQL of Iron is 20 ug/L,

Iron, ug/L = ND

3/11/2015

CEI / ICP-02 3/11/2015 2:14 AM

ASSET Laboratories

ICP-Metals in W a t e r

Dilution Test Summary

Work Order No.: N014777
Test Method: EPA 6010
Analysis Date: 03/10/15

Matrix: Water
Batch No.: 49847

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014760-001C DT 5X	Iron	ug/L	18.694655	NA	10.382276	80.06%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Soil

Dilution Test Summary

Work Order No.: N014777
Test Method: EPA 6010
Analysis Date: 03/10/15

Matrix: Water
Batch No.: 49850

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014777-012C DT 5X	Iron	ug/L	15.866275	NA	6.532201	142.89%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *11-Mar-15*

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID:	**N014760-001C-PS**	SampType:	**PS**	TestCode:	**6010_WDPGE**	Units:	**ug/L**	Prep Date:			RunNo:	**99372**	
Client ID:	**ZZZZZZ**	Batch ID:	**49847**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**3/10/2015**		SeqNo:	**1949445**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	114.643	20	100.0	10.38	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N014777-012C-PS**	SampType: **PS**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **99372**
Client ID: **ZZZZZZ**	Batch ID: **49850**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **3/10/2015**	SeqNo: **1949478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.317	20	100.0	6.532	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Iron concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N014777-001B**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.066639452 * 1 * (25/25) *1000

= 66.639452

Reporting results in two significant figures,

Iron, ug/L = 67

3/11/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014777
Test Method: EPA 6010
Analysis Date: 03/10/15

Matrix: Water
Batch No.: 49843

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014760-001B DT 5X	Iron	ug/L	97.56569	NA	89.354539	9.19%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N014777
Test Method: EPA 6010
Analysis Date: 03/10/15

Matrix: Water
Batch No.: 49844

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N014777-012B DT 5X	Iron	ug/L	43.911115	NA	34.894384	25.84%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *11-Mar-15*

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID: **N014760-001B-PS** SampType: **PS** TestCode: **6010_WPGEP** Units: **ug/L** Prep Date: RunNo: **99372**
Client ID: **ZZZZZZ** Batch ID: **49843** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/10/2015** SeqNo: **1949299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	194.134	20	100.0	89.35	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID: **N014777-012B-PS**	SampType: **PS**	TestCode: **6010_WPGEP**	Units: **ug/L**	Prep Date:	RunNo: **99372**
Client ID: **ZZZZZZ**	Batch ID: **49844**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **3/10/2015**	SeqNo: **1949333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	181.546	20	100.0	34.89	147	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N014777-011C,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 2.43321294079279 * 1 * (25/25)

= 2.43321294079279

Reporting results in two significant figures,

Arsenic, ug/L = 2.4

3/12/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N014777
Test Method: EPA 6020
Analysis Date: 3/9/2015

Matrix: Water
Batch No.: 49858

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn, Mo, Se & Cr. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014857-002B DT 5X	Arsenic	ug/L	5.055851522	PASS	4.812587028	5.05%	10
N014857-002B DT 5X	Barium	ug/L	54.61118107	PASS	51.16915796	6.73%	10
N014857-002B DT 5X	Manganese	ug/L	0	NA	0		10
N014857-002B DT 5X	Molybdenum	ug/L	5.263759913	NA	5.124477024	2.72%	10
N014857-002B DT 5X	Selenium	ug/L	0.802009627	NA	0.636958397	25.91%	10
N014857-002B DT 5X	Chromium	ug/L	3.677197337	NA	3.383297278	8.69%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *11-Mar-15*

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N014857-002B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**99347**
Client ID:	**ZZZZZZ**	Batch ID:	**49858**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**3/9/2015**	SeqNo:	**1948208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.991	0.10	10.00	4.813	102	80	120				
Barium	152.956	1.0	100.0	51.17	102	80	120				
Manganese	95.261	0.50	100.0	0	95.3	80	120				
Molybdenum	16.371	0.50	10.00	5.124	112	80	120				
Selenium	10.330	0.50	10.00	0.6370	96.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N014777
Project: PG&E Topock 659054.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N014857-002B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**99347**
Client ID:	**ZZZZZZ**	Batch ID:	**49858**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**3/9/2015**			SeqNo:	**1948112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.104	1.0	10.00	3.383	97.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

March 25, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N015012

RE: PG&E Topock, 658017.01.03.02

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on March 17, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *25-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658017.01.03.02
Lab Order: N015012

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N015000-001J-MS and N015000-001J-MSD are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
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ASSET Laboratories

Date: *25-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658017.01.03.02
Lab Order: N015012
Contract No: 2015-GMP-202

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015012-001A	PM-03-202	Water	3/17/2015 8:05:00 AM	3/17/2015	3/25/2015
N015012-001B	PM-03-202	Water	3/17/2015 8:05:00 AM	3/17/2015	3/25/2015
N015012-001C	PM-03-202	Water	3/17/2015 8:05:00 AM	3/17/2015	3/25/2015
N015012-001D	PM-03-202	Water	3/17/2015 8:05:00 AM	3/17/2015	3/25/2015
N015012-001E	PM-03-202	Water	3/17/2015 8:05:00 AM	3/17/2015	3/25/2015
N015012-002A	PM-04-202	Water	3/17/2015 7:45:00 AM	3/17/2015	3/25/2015
N015012-002B	PM-04-202	Water	3/17/2015 7:45:00 AM	3/17/2015	3/25/2015
N015012-002C	PM-04-202	Water	3/17/2015 7:45:00 AM	3/17/2015	3/25/2015
N015012-002D	PM-04-202	Water	3/17/2015 7:45:00 AM	3/17/2015	3/25/2015
N015012-002E	PM-04-202	Water	3/17/2015 7:45:00 AM	3/17/2015	3/25/2015

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ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-03-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 8:05:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150321B**	QC Batch: **49981**			PrepDate	**3/20/2015**		Analyst: **CEI**
Calcium	95000	58	500		µg/L	1	3/21/2015 12:18 PM
Iron	ND	1.3	20		µg/L	1	3/21/2015 12:18 PM
Magnesium	19000	11	100		µg/L	1	3/21/2015 12:18 PM
Sodium	180000	940	12000		µg/L	25	3/24/2015 11:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-04-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 7:45:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150321B**	QC Batch: **49981**			PrepDate	**3/20/2015**		Analyst: **CEI**
Calcium	120000	58	500		µg/L	1	3/21/2015 12:34 PM
Iron	ND	1.3	20		µg/L	1	3/21/2015 12:34 PM
Magnesium	26000	11	100		µg/L	1	3/21/2015 12:34 PM
Sodium	320000	940	12000		µg/L	25	3/24/2015 10:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *25-Mar-15*

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-49981** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99557**
Client ID: **PBW** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	113.297	500									
Iron	11.979	20									
Magnesium	13.094	100									

Sample ID **LCS-49981** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99557**
Client ID: **LCSW** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9539.047	500	10000	0	95.4	85	115				
Iron	105.695	20	100.0	0	106	85	115				
Magnesium	9945.218	100	10000	0	99.5	85	115				

Sample ID **N015000-001J-MS** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99557**
Client ID: **ZZZZZZ** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	270419.956	500	10000	259400	110	75	125				
Iron	293.921	20	100.0	200.1	93.9	75	125				
Magnesium	425078.530	100	10000	410400	147	75	125				S

Sample ID **N015000-001J-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99557**
Client ID: **ZZZZZZ** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	261734.721	500	10000	259400	23.6	75	125	270400	3.26	20	S
Iron	303.157	20	100.0	200.1	103	75	125	293.9	3.09	20	
Magnesium	410736.938	100	10000	410400	3.51	75	125	425100	3.43	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-49981	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/20/2015	RunNo:	99592
Client ID:	PBW	Batch ID:	49981	TestNo:	EPA 200.7			Analysis Date:	3/24/2015	SeqNo:	1962571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS-49981	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/20/2015	RunNo:	99592
Client ID:	LCSW	Batch ID:	49981	TestNo:	EPA 200.7			Analysis Date:	3/24/2015	SeqNo:	1962572

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19451.291	500	20000	0	97.3	85	115				

Sample ID	N015017-001A-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/20/2015	RunNo:	99592
Client ID:	ZZZZZZ	Batch ID:	49981	TestNo:	EPA 200.7			Analysis Date:	3/24/2015	SeqNo:	1962597

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	73727.281	2500	20000	53840	99.4	75	125				

Sample ID	N015017-001A-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/20/2015	RunNo:	99592
Client ID:	ZZZZZZ	Batch ID:	49981	TestNo:	EPA 200.7			Analysis Date:	3/24/2015	SeqNo:	1962598

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	76810.686	2500	20000	53840	115	75	125	73730	4.10	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-03-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 8:05:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150318A** QC Batch: **R99501** PrepDate							Analyst: **RB**
Hexavalent Chromium	9.3	0.015	0.20		µg/L	1	3/18/2015 01:28 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150321B** QC Batch: **49982** PrepDate **3/20/2015**							Analyst: **CEI**
Chromium	8.4	0.030	1.0		µg/L	1	3/21/2015 10:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-04-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 7:45:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150318A** QC Batch: **R99501** PrepDate							Analyst: **RB**
Hexavalent Chromium	18	0.030	0.40		µg/L	2	3/18/2015 02:09 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150321B** QC Batch: **49982** PrepDate **3/20/2015**							Analyst: **CEI**
Chromium	17	0.030	1.0		µg/L	1	3/21/2015 10:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *25-Mar-15*

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID **MB-49982** SampType: **MBLK** TestCode: **200.8_W_CR** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99566**
Client ID: **PBW** Batch ID: **49982** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-49982** SampType: **LCS** TestCode: **200.8_W_CR** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99566**
Client ID: **LCSW** Batch ID: **49982** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.745	1.0	10.00	0	97.5	85	115				

Sample ID **N014937-001B-MS** SampType: **MS** TestCode: **200.8_W_CR** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99566**
Client ID: **ZZZZZZ** Batch ID: **49982** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.981	1.0	10.00	0.6049	104	75	125				

Sample ID **N014937-001B-MSD** SampType: **MSD** TestCode: **200.8_W_CR** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99566**
Client ID: **ZZZZZZ** Batch ID: **49982** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.852	1.0	10.00	0.6049	102	75	125	10.98	1.19	20	

Sample ID **N015012-002C-MS** SampType: **MS** TestCode: **200.8_W_CR** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99566**
Client ID: **ZZZZZZ** Batch ID: **49982** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.959	1.0	10.00	16.52	104	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R99501** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **PBW** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1956000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99501** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **LCSW** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1956001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.960	0.20	5.000	0	99.2	90	110				

Sample ID **N015009-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **ZZZZZZ** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1956007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.641	0.20						9.581	0.627	20	

Sample ID **N015009-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **ZZZZZZ** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1956010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.648	0.20	5.000	9.581	101	90	110				

Sample ID **N015009-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **ZZZZZZ** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1956011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.697	0.20	5.000	9.581	102	90	110	14.65	0.336	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015012-001A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	99501
Client ID:	ZZZZZZ	Batch ID:	R99501	TestNo:	EPA 218.6			Analysis Date:	3/18/2015	SeqNo:	1956016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.246	0.20	5.000	9.281	99.3	90	110				

Sample ID	N015012-002A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	99501
Client ID:	ZZZZZZ	Batch ID:	R99501	TestNo:	EPA 218.6			Analysis Date:	3/18/2015	SeqNo:	1956018

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	27.459	0.40	10.00	17.52	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-03-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 8:05:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150321C**	QC Batch: **49989**				PrepDate	**3/20/2015**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	3/21/2015 12:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-04-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 7:45:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150321C**	QC Batch: **49989**				PrepDate	**3/20/2015**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	3/21/2015 01:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *25-Mar-15*

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-49989** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **PBW** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-49989** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **LCSW** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.116	0.50	100.0	0	93.1	85	115				

Sample ID **N015012-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **ZZZZZZ** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.140	0.50	100.0	0	96.1	75	125				

Sample ID **N015012-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **ZZZZZZ** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.400	0.50	100.0	0	96.4	75	125	96.14	0.270	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-03-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 8:05:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150320D**	QC Batch: **R99541**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	85	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	3/20/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-04-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 7:45:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150320D**	QC Batch: **R99541**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	65	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Total (As CaCO3)	65	1.2	5.0		mg/L	1	3/20/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R99541** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **LCSW** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.101	5.0	100.0	0	98.1	85	115				
Alkalinity, Total (As CaCO3)	100.211	5.0	100.0	0	100	85	115				

Sample ID **MB-R99541** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **PBW** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N015012-001DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **ZZZZZZ** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	84.388	5.0						85.44	1.24	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	84.388	5.0						85.44	1.24	30	

Sample ID **N015014-002AMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **ZZZZZZ** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	239.451	5.0	100.0	141.4	98.1	75	125				
Alkalinity, Total (As CaCO3)	239.451	5.0	100.0	141.4	98.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N015014-002AMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **ZZZZZZ** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	238.397	5.0	100.0	141.4	97.0	75	125	239.5	0.442	20	
Alkalinity, Total (As CaCO3)	238.397	5.0	100.0	141.4	97.0	75	125	239.5	0.442	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-03-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 8:05:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150318A** QC Batch: **R99512**				PrepDate			Analyst: **QBM**
Chloride	340	2.5	50		mg/L	100	3/18/2015 12:12 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150318A** QC Batch: **R99512**				PrepDate			Analyst: **QBM**
Sulfate	67	0.33	5.0		mg/L	10	3/18/2015 02:44 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-04-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 7:45:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150318A** QC Batch: **R99512**				PrepDate			Analyst: **QBM**
Chloride	590	2.5	50		mg/L	100	3/18/2015 12:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150318A** QC Batch: **R99512**				PrepDate			Analyst: **QBM**
Sulfate	180	0.66	10		mg/L	20	3/18/2015 02:57 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *25-Mar-15*

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R99512_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **PBW** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R99512_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **LCSW** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.383	0.50	2.500	0	95.3	90	110				

Sample ID **N015012-001DMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	591.800	50	250.0	341.0	100	80	120				

Sample ID **N015012-001DMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	596.600	50	250.0	341.0	102	80	120	591.8	0.808	20	

Sample ID **N015012-002DDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	591.600	50						592.3	0.118	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R99512_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **PBW** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R99512_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **LCSW** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.961	0.50	5.000	0	99.2	90	110				

Sample ID **N015012-001DMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	117.190	5.0	50.00	66.77	101	80	120				

Sample ID **N015012-001DMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	116.510	5.0	50.00	66.77	99.5	80	120	117.2	0.582	20	

Sample ID **N015012-002DDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	182.240	10						183.2	0.547	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-03-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 8:05:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150319D** QC Batch: **R99538** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.3	0.11	0.25		mg/L	5	3/19/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PM-04-202
Lab Order:	N015012	**Collection Date:**	3/17/2015 7:45:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	WATER
Lab ID:	N015012-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150319D** QC Batch: **R99538** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	2.5	0.044	0.10		mg/L	2	3/19/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R99538** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **PBW** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R99538** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **LCSW** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.016	0.050	1.000	0	102	85	115				

Sample ID **N015014-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **ZZZZZZ** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N015014-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **ZZZZZZ** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.050	0.050	1.000	0	105	75	125				

Sample ID **N015014-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **ZZZZZZ** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.034	0.050	1.000	0	103	75	125	1.050	1.52	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
QC Manager Shawn Duffy
Project Number 658017.01.03.02
Project 2015-GMP-202
Turnaround Time ~~10~~ B&C Days 5
Shipping Date: 3/17/2015
COC Number: GMP-202

			Container:	250 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	NA	NA	NA	NA			
			Holding Time:	28	180	180	7	7	28			
DATE	TIME	Matrix		Cr6 (E218.6) FF	Metals (E200.7/E200.8) FF Ca,Mg,Na,Fe,Mn	Metals (200.8T) Total Chromium	Anions (E300.0) Chloride,Sulfate	Alkalinity (SM2320B)	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
PM-03-202	3-17-15	0805	Water	X	X	X	X	X	X	ND15012-1	5	
PM-04-202	1	0745	1	X	X	X	X	X	X	1 -2	5	
										TOTAL NUMBER OF CONTAINERS	10	

	Signatures	Date/Time
Approved by		3-17-15
Sampled by		1230
Relinquished by		
Received by		3/17/15 1340
Relinquished by		3/17/15 1930
Received by		3/17/15 1930

Shipping Details

Method of Shipment: FedEx
On Ice: yes / no 1-gal ice
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
* TAT = 5 days *

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	3/17/2015	Workorder:	N015012
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: HG 3/18/2015

Reviewed By: 03/24/15

Sample Calculation

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Calcium concentration, in ug/L, in the original sample as follows:

Calcium, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N015012-001B**, the concentration in ug/L is calculated as follows:

Calcium, ug/L = 95.35429514 * 1 * (25/25) * 1000

= 95354.29514

Reporting results in two significant figures,

Calcium, ug/L = 95000

3/25/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015012
Test Method: EPA 200.7
Analysis Date: 03/21/15

Matrix: Water
Batch No.: 49981

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated value is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015000-001J DT 5X	Calcium	ug/L	253984.4878	PASS	259378.3321	2.08%	10
N015000-001J DT 5X	Iron	ug/L	217.0844778	NA	200.0547356	8.51%	10
N015000-001J DT 5X	Magnesium	ug/L	417554.8142	PASS	410386.2019	1.75%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015012
Test Method: EPA 200.7
Analysis Date: 03/24/15

Matrix: Water
Batch No.: 49981

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

~~Dilution test is not applicable to Na. The calculated value is <25~~RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015017-001A DT 25X	Sodium	ug/L	55663.63535	NA	53844.8679	3.38%	10

Note: NA - Not Applicable

Mary for 3/25/2015

ASSET Laboratories

Date: *24-Mar-15*

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N015000-001J-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **99557**
Client ID: **ZZZZZZ** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	264118.315	500	10000	259400	47.4	80	120				S
Iron	282.487	20	100.0	200.1	82.4	80	120				
Magnesium	423518.020	100	10000	410400	131	80	120				S

Sample ID **N015017-001A-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **99592**
Client ID: **ZZZZZZ** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/24/2015** SeqNo: **1962596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	77142.275	2500	20000	53840	116	80	120				

Dilution Test for CaMg @5x is within criteria.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 3/25/2015

Sample Calculation

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N015012-002C,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 16.518347282527 * 1 * (25/25)

= 16.518347282527

Reporting results in two significant figures,

Chromium, ug/L = 17

3/25/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N015012
Test Method: EPA 200.8
Analysis Date: 3/21/2015

Matrix: Water
Batch No.: 49982

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated value is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N014937-001B DT 5X	Chromium	ug/L	0.706071802	NA	0.604881749	16.73%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *23-Mar-15*

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID:	**N014937-001B-PS**	SampType:	**PS**	TestCode:	**200.8_W_CR**	Units:	**µg/L**	Prep Date:		RunNo:	**99566**	
Client ID:	**ZZZZZZ**	Batch ID:	**49982**	TestNo:	**EPA 200.8**			Analysis Date:	**3/21/2015**	SeqNo:	**1960663**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.901	1.0	10.00	~~0.7061~~ 0.6048	~~102~~ 103	80	120				

3/25/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Manganese concentration, in ug/L, in the original sample as follows:

Manganese, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N015012-001B,** the concentration in ug/L is calculated as follows:

Manganese, ug/L = 0 * 1 * (25/25)

= 0

Since PQL is 0.5 ug/L,

Manganese, ug/L = ND

3/25/2015

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N015012
Test Method: EPA 200.8
Analysis Date: 3/21/2015

Matrix: Water
Batch No.: 49989

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn. The calculated value is <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015012-001B DT 5X	Manganese	ug/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories

Date: *24-Mar-15*

CLIENT: CH2M HILL
Work Order: N015012
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **N015012-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **99567**
Client ID: **ZZZZZZ** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.025	0.50	100.0	0	96.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N015012-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 9.2811* 1

= 9.2811

Reporting result in two significant figures,

Cr^{+6}, µg/L = 9.3

Sample ID: **N015012-001D @ pH 7.78:**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.85mL)

= **0.021097 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.05) (0.021097 N) (1) * 1000

= 85.44285 **mg/L**

Reporting results in two significant figures,

= 85 **mg/L** as CaCO3

3/24/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.021097 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.05 mL) (0.021097 N) (1) * 1000

= 85.44285 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 85.44285 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 85 **mg/L**

3/24/2015

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: Water

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate , mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N015012-001D** concentration in mg/L is calculated as follows:

Sulfate , mg/L = 6.677 * 10

= 66.77

Reporting results in two significant figures,

Sulfate , mg/L = 67

3/24/2015

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N015012-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6540 * 5

= 3.27 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 3.3 mg/L

3/25/2015

March 31, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N015014

RE: PG&E Topock, 658274.01.IM.OP.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on March 17, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N015014

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N015000-001J-MS and N015000-001J-MSD are outside recovery criteria for Calcium and Magnesium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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Date: *31-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N015014
Contract No: IM3PLANT-EW

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015014-001A	PE-01-228b	Water	3/17/2015 1:07:00 PM	3/17/2015	3/31/2015
N015014-001B	PE-01-228b	Water	3/17/2015 1:07:00 PM	3/17/2015	3/31/2015
N015014-001C	PE-01-228b	Water	3/17/2015 1:07:00 PM	3/17/2015	3/31/2015
N015014-001D	PE-01-228b	Water	3/17/2015 1:07:00 PM	3/17/2015	3/31/2015
N015014-001E	PE-01-228b	Water	3/17/2015 1:07:00 PM	3/17/2015	3/31/2015
N015014-002A	TW-03D-228b	Water	3/17/2015 1:06:00 PM	3/17/2015	3/31/2015
N015014-002B	TW-03D-228b	Water	3/17/2015 1:06:00 PM	3/17/2015	3/31/2015
N015014-002C	TW-03D-228b	Water	3/17/2015 1:06:00 PM	3/17/2015	3/31/2015
N015014-002D	TW-03D-228b	Water	3/17/2015 1:06:00 PM	3/17/2015	3/31/2015
N015014-002E	TW-03D-228b	Water	3/17/2015 1:06:00 PM	3/17/2015	3/31/2015

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:07:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150318C** QC Batch: **R99498** PrepDate Analyst: **LR**							
Specific Conductance	3700	0.10	0.10		umhos/cm	1	3/18/2015 11:45 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150318C**	QC Batch: **R99498**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	3/18/2015 11:45 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N015014-002A DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **99498**
Client ID: **ZZZZZZ** Batch ID: **R99498** TestNo: **EPA 120.1** Analysis Date: **3/18/2015** SeqNo: **1955792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7870.000	0.10						7840	0.382	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:07:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150318B** QC Batch: **R99497**				PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	3/18/2015 02:30 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	3/18/2015 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150318B**	QC Batch: **R99497**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	3/18/2015 02:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	3/18/2015 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N015014-002A DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **99497**
Client ID: **ZZZZZZ** Batch ID: **R99497** TestNo: **SM4500-H+B** Analysis Date: **3/18/2015** SeqNo: **1955788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.650	0.10						7.660	0.131	10	H
Temp. at time of pH Analysis	23.300	0.10						23.60	1.28	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:07:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150318H**	QC Batch: **49962**				PrepDate	**3/18/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2500	25	25		mg/L	1	3/18/2015 02:30 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150318H**	QC Batch: **49962**			PrepDate	**3/18/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4900	50	50		mg/L	1	3/18/2015 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-49962** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/18/2015** RunNo: **99519**
Client ID: **PBW** Batch ID: **49962** TestNo: **SM2540C** Analysis Date: **3/18/2015** SeqNo: **1957165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-49962** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/18/2015** RunNo: **99519**
Client ID: **LCSW** Batch ID: **49962** TestNo: **SM2540C** Analysis Date: **3/18/2015** SeqNo: **1957166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	983.000	10	1000	0	98.3	80	120				

Sample ID **N015014-002A-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/18/2015** RunNo: **99519**
Client ID: **ZZZZZZ** Batch ID: **49962** TestNo: **SM2540C** Analysis Date: **3/18/2015** SeqNo: **1957171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4660.000	50						4890	4.82	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:07:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150321B**	QC Batch: **49981**			PrepDate	**3/20/2015**		Analyst: **CEI**
Calcium	100000	58	500		µg/L	1	3/21/2015 12:39 PM
Iron	ND	1.3	20		µg/L	1	3/21/2015 12:39 PM
Magnesium	23000	11	100		µg/L	1	3/21/2015 12:39 PM
Sodium	750000	3800	50000		µg/L	100	3/24/2015 11:02 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150321B**	QC Batch: **49981**			PrepDate	**3/20/2015**		Analyst: **CEI**
Calcium	230000	58	500		µg/L	1	3/21/2015 12:45 PM
Iron	ND	1.3	20		µg/L	1	3/21/2015 12:45 PM
Magnesium	34000	11	100		µg/L	1	3/21/2015 12:45 PM
Sodium	1500000	3800	50000		µg/L	100	3/24/2015 11:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-49981** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99557**
Client ID: **PBW** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	113.297	500									
Iron	11.979	20									
Magnesium	13.094	100									

Sample ID **LCS-49981** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99557**
Client ID: **LCSW** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9539.047	500	10000	0	95.4	85	115				
Iron	105.695	20	100.0	0	106	85	115				
Magnesium	9945.218	100	10000	0	99.5	85	115				

Sample ID **N015000-001J-MS** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99557**
Client ID: **ZZZZZZ** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	270419.956	500	10000	259400	110	75	125				
Iron	293.921	20	100.0	200.1	93.9	75	125				
Magnesium	425078.530	100	10000	410400	147	75	125				S

Sample ID **N015000-001J-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99557**
Client ID: **ZZZZZZ** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	261734.721	500	10000	259400	23.6	75	125	270400	3.26	20	S
Iron	303.157	20	100.0	200.1	103	75	125	293.9	3.09	20	
Magnesium	410736.938	100	10000	410400	3.51	75	125	425100	3.43	20	S

Qualifiers:

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ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-49981	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/20/2015	RunNo:	99592
Client ID:	PBW	Batch ID:	49981	TestNo:	EPA 200.7			Analysis Date:	3/24/2015	SeqNo:	1962571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS-49981	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/20/2015	RunNo:	99592
Client ID:	LCSW	Batch ID:	49981	TestNo:	EPA 200.7			Analysis Date:	3/24/2015	SeqNo:	1962572

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19451.291	500	20000	0	97.3	85	115				

Sample ID	N015017-001A-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/20/2015	RunNo:	99592
Client ID:	ZZZZZZ	Batch ID:	49981	TestNo:	EPA 200.7			Analysis Date:	3/24/2015	SeqNo:	1962597

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	73727.281	2500	20000	53840	99.4	75	125				

Sample ID	N015017-001A-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/20/2015	RunNo:	99592
Client ID:	ZZZZZZ	Batch ID:	49981	TestNo:	EPA 200.7			Analysis Date:	3/24/2015	SeqNo:	1962598

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	76810.686	2500	20000	53840	115	75	125	73730	4.10	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:07:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150321C**	QC Batch: **49989**				PrepDate	**3/20/2015**	Analyst: **CEI**
Manganese	46	0.026	0.50		µg/L	1	3/21/2015 01:11 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150321C**	QC Batch: **49989**				PrepDate	**3/20/2015**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	3/21/2015 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-49989** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **PBW** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-49989** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **LCSW** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.116	0.50	100.0	0	93.1	85	115				

Sample ID **N015012-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **ZZZZZZ** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.140	0.50	100.0	0	96.1	75	125				

Sample ID **N015012-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **ZZZZZZ** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1960798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.400	0.50	100.0	0	96.4	75	125	96.14	0.270	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:07:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150318A** QC Batch: **R99501** PrepDate							Analyst: **RB**
Hexavalent Chromium	4.0	0.015	0.20		µg/L	1	3/18/2015 11:44 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **ICP7_150321C** QC Batch: **49989** PrepDate **3/20/2015**							Analyst: **CEI**
Chromium	3.4	0.030	1.0		µg/L	1	3/21/2015 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
SM 3500-CR B							
RunID: **WETCHEM_150330D** QC Batch: **R99693** PrepDate Analyst: **QBM**							
Chromium, Hexavalent	740	2.8	20		µg/L	2	3/30/2015
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **ICP7_150321C** QC Batch: **49989** PrepDate **3/20/2015** Analyst: **CEI**							
Chromium	690	0.15	5.0		µg/L	5	3/21/2015 03:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-49989** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **PBW** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1962252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-49989** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **LCSW** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1962253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.419	1.0	10.00	0	94.2	85	115				

Sample ID **N015012-001B-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **ZZZZZZ** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1962257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.508	1.0	10.00	9.089	94.2	75	125				

Sample ID **N015012-001B-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **3/20/2015** RunNo: **99567**
Client ID: **ZZZZZZ** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1962258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.678	1.0	10.00	9.089	95.9	75	125	18.51	0.910	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **MB-R99501** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **PBW** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1955918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99501** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **LCSW** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1955919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.960	0.20	5.000	0	99.2	90	110				

Sample ID **N015013-001B-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **ZZZZZZ** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1955921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.028	0.20	1.000	0.06150	96.6	90	110				

Sample ID **N015014-001C-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **ZZZZZZ** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1955923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.829	0.20	5.000	4.002	96.5	90	110				

Sample ID **N015009-001A-DUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **ZZZZZZ** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1955925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.641	0.20						9.581	0.627	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **N015009-001A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **ZZZZZZ** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1955928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.648	0.20	5.000	9.581	101	90	110				

Sample ID **N015009-001A-MSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99501**
Client ID: **ZZZZZZ** Batch ID: **R99501** TestNo: **EPA 218.6** Analysis Date: **3/18/2015** SeqNo: **1955929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.697	0.20	5.000	9.581	102	90	110	14.65	0.336	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R99693** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99693**
Client ID: **LCSW** Batch ID: **R99693** TestNo: **SM 3500-Cr B** Analysis Date: **3/30/2015** SeqNo: **1967505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	98.458	10	100.0	0	98.5	85	115				

Sample ID **MB-R99693** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99693**
Client ID: **PBW** Batch ID: **R99693** TestNo: **SM 3500-Cr B** Analysis Date: **3/30/2015** SeqNo: **1967506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID **N015014-002CDUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99693**
Client ID: **ZZZZZZ** Batch ID: **R99693** TestNo: **SM 3500-Cr B** Analysis Date: **3/30/2015** SeqNo: **1967508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	734.974	20						740.2	0.713	20	

Sample ID **N015014-002CMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99693**
Client ID: **ZZZZZZ** Batch ID: **R99693** TestNo: **SM 3500-Cr B** Analysis Date: **3/30/2015** SeqNo: **1967509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1226.246	20	500.0	740.2	97.2	85	115				

Sample ID **N015014-002CMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **99693**
Client ID: **ZZZZZZ** Batch ID: **R99693** TestNo: **SM 3500-Cr B** Analysis Date: **3/30/2015** SeqNo: **1967510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1227.828	20	500.0	740.2	97.5	85	115	1226	0.129	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:07:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150320D**	QC Batch: **R99541**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	220	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	3/20/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150320D**	QC Batch: **R99541**			PrepDate			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	140	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	3/20/2015
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	3/20/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R99541** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **LCSW** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	98.101	5.0	100.0	0	98.1	85	115				
Alkalinity, Total (As CaCO3)	100.211	5.0	100.0	0	100	85	115				

Sample ID **MB-R99541** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **PBW** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N015012-001DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **ZZZZZZ** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	84.388	5.0						85.44	1.24	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	84.388	5.0						85.44	1.24	30	

Sample ID **N015014-002AMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **ZZZZZZ** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	239.451	5.0	100.0	141.4	98.1	75	125				
Alkalinity, Total (As CaCO3)	239.451	5.0	100.0	141.4	98.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N015014-002AMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99541**
Client ID: **ZZZZZZ** Batch ID: **R99541** TestNo: **SM 2320 B** Analysis Date: **3/20/2015** SeqNo: **1957948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	238.397	5.0	100.0	141.4	97.0	75	125	239.5	0.442	20	
Alkalinity, Total (As CaCO3)	238.397	5.0	100.0	141.4	97.0	75	125	239.5	0.442	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT: CH2M HILL
Lab Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N015014-001

Client Sample ID: PE-01-228b
Collection Date: 3/17/2015 1:07:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150318A** QC Batch: **R99512** PrepDate Analyst: **QBM**							
Chloride	970	5.0	100		mg/L	200	3/18/2015 12:38 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150318A** QC Batch: **R99512** PrepDate Analyst: **QBM**							
Sulfate	360	1.6	25		mg/L	50	3/18/2015 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150318A** QC Batch: **R99512** PrepDate Analyst: **QBM**							
Chloride	2200	12	250		mg/L	500	3/18/2015 12:50 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150318A** QC Batch: **R99512** PrepDate Analyst: **QBM**							
Sulfate	520	1.6	25		mg/L	50	3/18/2015 03:22 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R99512_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **PBW** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R99512_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **LCSW** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.383	0.50	2.500	0	95.3	90	110				

Sample ID **N015012-001DMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	591.800	50	250.0	341.0	100	80	120				

Sample ID **N015012-001DMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	596.600	50	250.0	341.0	102	80	120	591.8	0.808	20	

Sample ID **N015012-002DDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	591.600	50						592.3	0.118	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R99512_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **PBW** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R99512_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **LCSW** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.961	0.50	5.000	0	99.2	90	110				

Sample ID **N015012-001DMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	117.190	5.0	50.00	66.77	101	80	120				

Sample ID **N015012-001DMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	116.510	5.0	50.00	66.77	99.5	80	120	117.2	0.582	20	

Sample ID **N015012-002DDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99512**
Client ID: **ZZZZZZ** Batch ID: **R99512** TestNo: **EPA 300.0** Analysis Date: **3/18/2015** SeqNo: **1956900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	182.240	10						183.2	0.547	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:07:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150319D** QC Batch: **R99538** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	3/19/2015

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-228b
Lab Order:	N015014	**Collection Date:**	3/17/2015 1:06:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150319D** QC Batch: **R99538** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.6	0.11	0.25		mg/L	5	3/19/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R99538** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **PBW** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R99538** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **LCSW** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.016	0.050	1.000	0	102	85	115				

Sample ID **N015014-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **ZZZZZZ** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N015014-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **ZZZZZZ** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.050	0.050	1.000	0	105	75	125				

Sample ID **N015014-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99538**
Client ID: **ZZZZZZ** Batch ID: **R99538** TestNo: **SM4500-NO3** Analysis Date: **3/19/2015** SeqNo: **1957904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.034	0.050	1.000	0	103	75	125	1.050	1.52	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

List of Analyst/s

WORKORDER: N015014

ANALYST LIST

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0, SM 2320B, SM 3500-Cr B
Claire Ignacio	EPA 200.7, EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 4500 H+B
Ryan Balilu	EPA 218.6, SM 4500-NO3F

CH2MHILL

CHAIN OF CUSTODY RECORD

3/17/2015 12:00:52 PM

Project Name PG&E Topock
Location Topock
Project Number 658274.01.IM.OP.00
Project Manager Scott O'Donnell
Sample Manager Shawn Duffy

Task Order
Project IM3PLANT-EW-228B
Turnaround Time 10 Days
Shipping Date: 3/17/2015
COC Number: 228b

			Container:	1 Liter Poly	1 Liter Poly	1 Liter Poly	500 ml Poly	500 ml Poly	250 ml Poly	1 Liter Poly	1 Liter Poly	250 ml Poly	1 Liter Poly			
			Preservatives:	4°C	4°C	4°C	4°C	4°C	4°C	4°C Lab H2SO4	4°C	4°C	4°C			
			Filtered:	NA	NA	NA	Lab	Lab	NA	NA	NA	NA	NA			
			Holding Time:	7	7	7	180	180	1	28	7	1	7			
	DATE	**TIME**	**Matrix**	ALKALINITY (SM2320B)	Anions (E300.0) Cl, SO4	CONDUCTIVITY (E120.1)	Diss Metals(E200.7) Ca,Mg,Na,Fe LabFilt	Diss Metals(E200.8) Cr & Mn LabFilt	E218.6 Lab Filtered	Nitrate/Nitrite (SM4500NO3-E)	pH (E150.0)	SM3500-Cr6 LabFilt	TDS (SM2540C)		Number of Containers	COMMENTS
PE-01-228b	3/17/2015	1307	Water	X	X	X	X	X	X	X	X		X	ND15014-1	4	
TW-03D-228b	3/17/2015	1366	Water	X	X	X	X	X		X	X	X	X	1 -2	4	
														TOTAL NUMBER OF CONTAINERS	8	

	Signatures	Date/Time
Approved by		3-17-15
Sampled by	Ryan Phelps	13:40
Relinquished by		3/17/15 1540
Received by		3/17/15
Relinquished by		3/17/15 1730
Received by		

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 1-gel
Airbill No: VK#2
Lab Name: ASSET Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Glen Gesmundo

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	3/17/2015	Workorder:	N015014
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☑	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☐	No ☐	NA ☑
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☑	NA ☐

Comments: Samples for metals are lab filtered and preserved.

Checklist Completed By: HG 3/20/2015

Reviewed By: 03/24/15

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N015014-001A,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(57.1801-57.0811)*1000000}{40}$$

$$= 2{,}475 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2500 mg/L

Julia Ramit 3/20/2015

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO
Date Finished:3/19/15								
MB-49962	100	75.7441	75.7444	3	1	3		
LCS-49962	100	77.1004	77.1987	983	1	983		
N015000-001E	30	53.6565	53.7832	1267	3.33333333	4223.33333	4230	0.998
N015013-001A	20	53.9248	54.0126	878	5	4390	7380	0.595
N015014-001A	40	57.0811	57.1801	990	2.5	2475	3680	0.673
N015014-002A	20	55.5522	55.65	978	5	4890	7840	0.624
N015014-002A DUP	20	63.7816	63.8748	932	5	4660	7840	0.594
N015017-001C	100	55.5388	55.5705	317	1	317	372	0.852
N015017-002C	100	55.7369	55.7719	350	1	350	413	0.847
N015017-003B	200	54.9416	54.9496	80	0.5	40	51.2	0.781

Silia Ramit 3/20/2015

Sample Calculation

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Calcium concentration, in ug/L, in the original sample as follows:

Calcium, ug/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Amt. of Sample mL

For Sample **N015014-001B**, the concentration in ug/L is calculated as follows:

Calcium, ug/L = 104.416408 * 1 * (25/25) * 1000

= 104416.408

Reporting results in two significant figures,

Calcium, ug/L = 100000

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015014
Test Method: EPA 200.7
Analysis Date: 03/21/15

Matrix: Water
Batch No.: 49981

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated value is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015000-001J DT 5X	Calcium	ug/L	253984.4878	PASS	259378.3321	2.08%	10
N015000-001J DT 5X	Iron	ug/L	217.0844778	NA	200.0547356	8.51%	10
N015000-001J DT 5X	Magnesium	ug/L	417554.8142	PASS	410386.2019	1.75%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015014
Test Method: EPA 200.7
Analysis Date: 03/24/15

Matrix: Water
Batch No.: 49981

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Na. The calculated value is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015017-001A DT 25X	Sodium	ug/L	55663.63535	NA	53844.8679	3.38%	10

Note: NA - Not Applicable

3/31/2015
for

ASSET Laboratories

Date: *24-Mar-15*

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N015000-001J-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **99557**
Client ID: **ZZZZZZ** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/21/2015** SeqNo: **1959197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	264118.315	500	10000	259400	47.4	80	120				S
Iron	282.487	20	100.0	200.1	82.4	80	120				
Magnesium	423518.020	100	10000	410400	131	80	120				S

Sample ID **N015017-001A-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **99592**
Client ID: **ZZZZZZ** Batch ID: **49981** TestNo: **EPA 200.7** Analysis Date: **3/24/2015** SeqNo: **1962596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	77142.275	2500	20000	53840	116	80	120				

Dilution Test for Ca Mg @5x is within criteria

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 3/31/2015

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N015014-002B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 137.511162207072 * 5 * (25/25)

= 687.55581103536

Reporting results in two significant figures,

Chromium, ug/L = 690

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N015014
Test Method: EPA 200.8
Analysis Date: 3/21/2015

Matrix: Water
Batch No.: 49989

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn & Cr. The calculated values are <25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015012-001B DT 5X	Manganese	ug/L	0	NA	0		10
N015012-001B DT 5X	Chromium	ug/L	10.04522108	NA	9.088718811	10.52%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *24-Mar-15*

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	**N015012-001B-PS**	SampType:	**PS**	TestCode:	**200.8_WDISS**	Units:	**µg/L**	Prep Date:				RunNo:	**99567**
Client ID:	**ZZZZZZ**	Batch ID:	**49989**	TestNo:	**EPA 200.8**			Analysis Date:	**3/21/2015**			SeqNo:	**1960796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.025	0.50	100.0	0	96.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015014
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **N015012-001B-PS** SampType: **PS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **99567**
Client ID: **ZZZZZZ** Batch ID: **49989** TestNo: **EPA 200.8** Analysis Date: **3/21/2015** SeqNo: **1962256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.093	1.0	10.00	9.089	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N015014-001C** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 4.0023* 1

= 4.0023

Reporting result in two significant figures,

Cr^{+6}, µg/L = 4.0

Sample ID: **N015014-001A @ pH 7.87:**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.85mL)

= **0.021097 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (10.35) (0.021097 N) (1) * 1000

= 218.35395 **mg/L**

Reporting results in two significant figures,

= 220 **mg/L** as CaCO3

3/24/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.021097 N) (1) * 1000

= 0

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (10.35 mL) (0.021097 N) (1) * 1000

= 218.35395 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 218.35395 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = 0

HCO_3 Alkalinity as $CaCO_3$ = 220 **mg/L**

3/24/2015

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N015014-001A**, concentration in mg/L are calculated as follows:

Chloride, mg/L	=	4.868 * 200
	=	973.6

Reporting **N015014-001A** results in two significant figures,

Chloride, mg/L	=	970

3/31/2015

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N015014-002C,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 370.117 *2

= 740.234 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 740

3/31/2015

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N015014-002D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.7236 * 5

= 3.618 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 3.6 mg/L

March 31, 2015

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N015094

RE: PG&E Topock, 658017.01.03.02

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on March 24, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock, 658017.01.03.02
Lab Order: N015094

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

ASSET LABORATORIES
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ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658017.01.03.02
Lab Order: N015094
Contract No: 2015-GMP-202

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015094-001A	MW-65-160-202b	Groundwater	3/24/2015 9:46:00 AM	3/24/2015	3/31/2015
N015094-001B	MW-65-160-202b	Groundwater	3/24/2015 9:46:00 AM	3/24/2015	3/31/2015
N015094-001C	MW-65-160-202b	Groundwater	3/24/2015 9:46:00 AM	3/24/2015	3/31/2015

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-202b
Lab Order:	N015094	**Collection Date:**	3/24/2015 9:46:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	GROUNDWATER
Lab ID:	N015094-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150326A** QC Batch: **R99647** PrepDate							Analyst: **RB**
Hexavalent Chromium	140	0.30	4.0		µg/L	20	3/26/2015 03:28 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150326A** QC Batch: **50041** PrepDate **3/26/2015**							Analyst: **CEI**
Chromium	120	0.030	1.0		µg/L	1	3/26/2015 01:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Work Order: N015094
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R99647** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99647**
Client ID: **PBW** Batch ID: **R99647** TestNo: **EPA 218.6** Analysis Date: **3/26/2015** SeqNo: **1965625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R99647** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99647**
Client ID: **LCSW** Batch ID: **R99647** TestNo: **EPA 218.6** Analysis Date: **3/26/2015** SeqNo: **1965626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.842	0.20	5.000	0	96.8	90	110				

Sample ID **N015101-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99647**
Client ID: **ZZZZZZ** Batch ID: **R99647** TestNo: **EPA 218.6** Analysis Date: **3/26/2015** SeqNo: **1965628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.710	0.20						1.701	0.540	20	

Sample ID **N015101-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99647**
Client ID: **ZZZZZZ** Batch ID: **R99647** TestNo: **EPA 218.6** Analysis Date: **3/26/2015** SeqNo: **1965629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.758	0.20	5.000	1.701	101	90	110				

Sample ID **N015101-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **99647**
Client ID: **ZZZZZZ** Batch ID: **R99647** TestNo: **EPA 218.6** Analysis Date: **3/26/2015** SeqNo: **1965630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.825	0.20	5.000	1.701	102	90	110	6.758	0.987	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N015094
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**N015094-001A-MS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:			RunNo:	**99647**	
Client ID:	**ZZZZZZ**	Batch ID:	**R99647**	TestNo:	**EPA 218.6**			Analysis Date:	**3/26/2015**		SeqNo:	**1965650**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	235.134	4.0	100.0	136.9	98.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015094
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-50041	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/26/2015	RunNo:	99643
Client ID:	PBW	Batch ID:	50041	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/26/2015	SeqNo:	1965219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-50041	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/26/2015	RunNo:	99643
Client ID:	LCSW	Batch ID:	50041	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/26/2015	SeqNo:	1965220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.532	1.0	10.00	0	95.3	85	115				

Sample ID	N015100-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/26/2015	RunNo:	99643
Client ID:	ZZZZZZ	Batch ID:	50041	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/26/2015	SeqNo:	1965224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.254	1.0	10.00	6.529	117	75	125				

Sample ID	N015100-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	3/26/2015	RunNo:	99643
Client ID:	ZZZZZZ	Batch ID:	50041	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/26/2015	SeqNo:	1965225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.850	1.0	10.00	6.529	113	75	125	18.25	2.24	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-202b
Lab Order:	N015094	**Collection Date:**	3/24/2015 9:46:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	GROUNDWATER
Lab ID:	N015094-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150330E** QC Batch: **R99695** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	13	0.44	1.0		mg/L	20	3/30/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Work Order: N015094
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **N015094-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99695**
Client ID: **ZZZZZZ** Batch ID: **R99695** TestNo: **SM4500-NO3** Analysis Date: **3/30/2015** SeqNo: **1967532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	12.474	1.0						13.06	4.59	20	

Sample ID **N015094-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99695**
Client ID: **ZZZZZZ** Batch ID: **R99695** TestNo: **SM4500-NO3** Analysis Date: **3/30/2015** SeqNo: **1967533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	31.210	1.0	20.00	13.06	90.8	75	125				

Sample ID **N015094-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99695**
Client ID: **ZZZZZZ** Batch ID: **R99695** TestNo: **SM4500-NO3** Analysis Date: **3/30/2015** SeqNo: **1967534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	31.088	1.0	20.00	13.06	90.1	75	125	31.21	0.392	20	

Sample ID **MB-R99695** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99695**
Client ID: **PBW** Batch ID: **R99695** TestNo: **SM4500-NO3** Analysis Date: **3/30/2015** SeqNo: **1967535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R99695** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **99695**
Client ID: **LCSW** Batch ID: **R99695** TestNo: **SM4500-NO3** Analysis Date: **3/30/2015** SeqNo: **1967537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.056	0.050	1.000	0	106	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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ANALYTICAL RESULTS

Print Date: *31-Mar-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-202b
Lab Order:	N015094	**Collection Date:**	3/24/2015 9:46:00 AM
Project:	PG&E Topock, 658017.01.03.02	**Matrix:**	GROUNDWATER
Lab ID:	N015094-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150326A**	QC Batch: **50041**				PrepDate	**3/26/2015**	Analyst: **CEI**
Arsenic	0.67	0.027	0.10		µg/L	1	3/26/2015 01:26 PM
Manganese	ND	0.026	0.50		µg/L	1	3/26/2015 01:26 PM
Molybdenum	25	0.15	0.50		µg/L	1	3/26/2015 01:26 PM
Selenium	6.9	0.069	0.50		µg/L	1	3/26/2015 01:26 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *31-Mar-15*

CLIENT: CH2M HILL
Work Order: N015094
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50041** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/26/2015** RunNo: **99643**
Client ID: **PBW** Batch ID: **50041** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/26/2015** SeqNo: **1965320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-50041** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/26/2015** RunNo: **99643**
Client ID: **LCSW** Batch ID: **50041** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/26/2015** SeqNo: **1965321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.988	0.10	10.00	0	99.9	85	115				
Manganese	93.726	0.50	100.0	0	93.7	85	115				
Molybdenum	9.497	0.50	10.00	0	95.0	85	115				
Selenium	9.088	0.50	10.00	0	90.9	85	115				

Sample ID **N015100-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/26/2015** RunNo: **99643**
Client ID: **ZZZZZZ** Batch ID: **50041** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/26/2015** SeqNo: **1965325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	63.635	0.10	10.00	54.31	93.3	75	125				
Manganese	110.346	0.50	100.0	0	110	75	125				
Molybdenum	23.977	0.50	10.00	11.90	121	75	125				
Selenium	11.263	0.50	10.00	0.3753	109	75	125				

Sample ID **N015100-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/26/2015** RunNo: **99643**
Client ID: **ZZZZZZ** Batch ID: **50041** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/26/2015** SeqNo: **1965326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	63.811	0.10	10.00	54.31	95.1	75	125	63.63	0.277	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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CLIENT: CH2M HILL
Work Order: N015094
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015100-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **3/26/2015** RunNo: **99643**
Client ID: **ZZZZZZ** Batch ID: **50041** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/26/2015** SeqNo: **1965326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	111.822	0.50	100.0	0	112	75	125	110.3	1.33	20	
Molybdenum	23.853	0.50	10.00	11.90	120	75	125	23.98	0.520	20	
Selenium	11.241	0.50	10.00	0.3753	109	75	125	11.26	0.196	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
QC Manager Shawn Duffy
Project Number 658017.01.03.02
Project 2015-GMP-202B
Turnaround Time 5 Days
Shipping Date: 3/20/2015
COC Number: GMP-202b

		Container:	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	125 ml Poly			
		Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	H2SO4, pH<2, 4°C			
		Filtered:	Field	Field	Field	Field	NA			
		Holding Time:	28	180	180	180	28			
DATE	TIME	Matrix	Cr6 (E218.6) FF	Arsenic (6020A) FF	Metals (6020A) FF Chromium	Metals (6020A) FF Mo,Se,Mn	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
3-24-15	0946	water	X	X	X	X	X	N015094-1	3	
MW-65-160-202b								TOTAL NUMBER OF CONTAINERS	3	

	Signatures	Date/Time
Approved by		
Sampled by	Josh Rosenberg	3-24-15
Relinquished by		13:05
Received by		3/24/15 1305
Relinquished by		3/24/15 1927
Received by		3/24/15 1927

Shipping Details
Method of Shipment: FedEx
On Ice: (yes) / no 1-gal Ik#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
QC Manager Shawn Duffy
Project Number 658017.01.03.02
Project 2015-GMP-202B
Turnaround Time 5 Days
Shipping Date: 3/20/2015
COC Number: GMP-202b

			Container:	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	Field	NA			
			Holding Time:	28	180	180	180	28			
DATE	TIME	Matrix		Cr6 (E218.6) FF	Arsenic (6020A) FF	Metals (6020A) FF Chromium	Metals (6020A) FF Mo,Se,Mn	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
									N015094 - 1		
									TOTAL NUMBER OF CONTAINERS		

	Signatures	Date/Time
Approved by		
Sampled by	Josh Rosenberg	3-24-15
Relinquished by		13:05
Received by		3/24/15 1305
Relinquished by		3/24/15 1927
Received by		3/24/15 1927

Shipping Details

Method of Shipment: FedEx
On Ice: (yes) / no 1 gal lk#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

Report Copy to
Shawn Duffy
(530) 229-3303

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	3/24/2015	Workorder:	N015094
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: COC has no sample details and requested parameters; logged received sample labeled under 2015-GMP-202b #:658017.01.03.02 project and analyze for the parameters on the chain.

Checklist Completed By: HG 3/27/2015

Reviewed By: _____

ASSET Laboratories

WORK ORDER Summary

26-Mar-15

WorkOrder: N015094

Client ID: CH2HI01

Project: PG&E Topock, 658017.01.03.02 **QC Level:** Level IV **Date Received:** 3/24/2015

Comments: Report Copy to: Shawn Duffy (530) 229-3303

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N015094-001A	MW-65-160-202b	3/24/2015 9:46:00 AM	3/31/2015	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N015094-001B			3/31/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/31/2015		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/31/2015		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N015094-001C			3/31/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N015094-002A	FOLDER		3/31/2015		Folder	Folder	☐	☐	☐	LAB

Sample Control LV

From: Marlon Cartin <marlon@assetlaboratories.com>
Sent: Tuesday, March 31, 2015 10:51 PM
To: Sample Control
Cc: Hanah Glodoviza
Subject: Fwd: Sample from IM3
Attachments: GMP-202b COC 3-24-15.pdf; Untitled attachment 00004.htm

Forwarding completed COC.

Thanks,

Marlon

Sent from my iPhone

Begin forwarded message:

> **From:** <Barry.Collom@CH2M.com>
> **Date:** March 25, 2015 at 5:02:21 PM PDT
> **To:** <marlon@assetlaboratories.com>
> **Subject: RE: Sample from IM3**
>
> Hi Marlon,
> Wow, my guys really let me down with that COC!
>
> I completed a proper one and it is attached.
>
> Please note it has a 5 day TAT...
>
> I feel some retraining for the guys coming on...
>
> Thanks for letting me fix this between us!
>
> B.
>
> -----Original Message-----
> From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
> Sent: Wednesday, March 25, 2015 3:52 PM
> To: Collom, Barry/RIV
> Subject: Sample from IM3
>
> Hi Barry,
>
> The attached COC is missing the sample details. I received 3 containers. 1 for Cr+6, 1 for Metals and 1 for NO3/NO2. Please populate the missing details and send back to me.
>
> Thanks,
>
> Marlon B. Cartin
> Project Manager
> Nevada: 3151 W. Post Road, Las Vegas, NV 89118

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N015094-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 6.8441 * 20

= 136.882

Reporting result in two significant figures,

Cr^{+6}, µg/L = 140

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N015094-001C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6530 * 20

= 13.06 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 13 mg/L

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

Arsenic, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N015094-001B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.673886432082475 * 1 * (25/25)

= 0.673886432082475

Reporting results in two significant figures,

Arsenic, ug/L = 0.67

3/31/201

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015094
Test Method: EPA 6020
Analysis Date: 3/26/2015

Matrix: Water
Batch No.: 50041

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mn, and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015100-001B-DT 5X	Arsenic	µg/L	58.71906373	PASS	54.30605976	8.13%	10
N015100-001B-DT 5X	Chromium	µg/L	6.658411015	NA	6.528826577	1.98%	10
N015100-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N015100-001B-DT 5X	Molybdenum	µg/L	12.83255309	PASS	11.90031469	7.83%	10
N015100-001B-DT 5X	Selenium	µg/L	0.487055545	NA	0.375261891	29.79%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *26-Mar-15*

CLIENT: CH2M HILL
Work Order: N015094
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N015100-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**99643**
Client ID:	**ZZZZZZ**	Batch ID:	**50041**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**3/26/2015**	SeqNo:	**1965324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	65.327	0.10	10.00	54.31	110	80	120				
Manganese	111.212	0.50	100.0	0	111	80	120				
Molybdenum	25.463	0.50	10.00	11.90	136	80	120				S
Selenium	11.180	0.50	10.00	0.3753	108	80	120				

DT of Mo @5x is within criteria

3/31/201

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL
Work Order: N015094
Project: PG&E Topock, 658017.01.03.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N015100-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**99643**
Client ID:	**ZZZZZZ**	Batch ID:	**50041**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**3/26/2015**			SeqNo:	**1965223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.046	1.0	10.00	6.529	115	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Appendix C
Arsenic Monitoring Results

TABLE C-1
Arsenic Results in Monitoring Wells, March 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Sample Method	Dissolved Arsenic (µg/L)
MW-9	SA	02-Dec-14		MP	1.6
MW-10	SA	02-Dec-14		MP	3.2
MW-11	SA	02-Dec-14		MP	1.5
		02-Dec-14	FD	MP	1.4
MW-12	SA	01-May-14		3V	38.0
		15-Dec-14		MP	40.0
MW-13	SA	13-Nov-14		MP	1.9
MW-14	SA	12-Nov-14		MP	0.94
MW-16	SA	22-Apr-14		3V	10.0
MW-17	SA	23-Apr-14		3V	1.4
MW-20-130	DA	12-May-14		3V	5.0
		15-Dec-14		MP	3.9
		15-Dec-14	FD	MP	3.9
MW-22	SA	30-Apr-14		3V	12.0
		18-Dec-14		MP	14.0
MW-23-060	BR	22-Apr-14		3V	2.6
		10-Nov-14		3V	3.1
MW-23-080	BR	22-Apr-14		3V	2.7
		10-Nov-14		3V	3.4
MW-24A	SA	04-Nov-14		MP	0.28
MW-24B	DA	18-Dec-14		MP	2.5
MW-24BR	BR	04-Dec-14		3V	0.41
MW-25	SA	02-Dec-14		MP	1.2
MW-26	SA	05-May-14		3V	1.7
		15-Dec-14		MP	2.1
		15-Dec-14	FD	MP	1.9
MW-27-20	SA	14-Apr-14		3V	0.84
		04-Nov-14		MP	1.7
MW-27-60	MA	14-Apr-14		3V	6.9
		14-Apr-14	FD	3V	7.2
		04-Nov-14		MP	11.0
		04-Nov-14	FD	MP	11.0
MW-27-85	DA	14-Apr-14		3V	0.18
		04-Nov-14		MP	1.6
MW-28-25	SA	15-Apr-14		3V	1.8

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First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Sample Method	Dissolved Arsenic (µg/L)
MW-28-25	SA	11-Nov-14		MP	1.0
MW-28-90	DA	15-Apr-14		3V	1.8
		15-Apr-14	FD	3V	1.8
		11-Nov-14		MP	1.7
MW-29	SA	16-Apr-14		3V	5.7
		10-Nov-14		MP	7.8
MW-30-30	SA	10-Nov-14		MP	1.1
MW-30-50	MA	10-Nov-14		MP	2.7
		10-Nov-14	FD	MP	2.8
MW-31-60	SA	03-Dec-14		MP	1.1
MW-31-135	DA	05-Nov-14		MP	3.3
MW-32-20	SA	11-Nov-14		MP	3.3
		11-Nov-14	FD	MP	3.7
MW-32-35	SA	16-Apr-14		3V	27.0
		11-Nov-14		MP	21.0
MW-33-40	SA	17-Apr-14		3V	14.0
		11-Nov-14		MP	8.9
MW-33-90	MA	21-Apr-14		3V	1.3
		21-Apr-14	FD	3V	1.3
		12-Nov-14		MP	1.2
MW-33-150	DA	17-Apr-14		3V	1.1
		12-Nov-14		MP	0.74
MW-33-210	DA	21-Apr-14		3V	0.94
		12-Nov-14		MP	1.0
MW-34-55	MA	06-Nov-14		MP	2.1
MW-34-80	DA	17-Apr-14		3V	1.4
		06-Nov-14		MP	1.3
MW-34-100	DA	17-Apr-14		3V	1.3
		02-Oct-14		MP	1.3
		01-Dec-14		MP	1.6
		01-Dec-14	FD	MP	1.5
		16-Feb-15		MP	1.5
MW-35-60	SA	24-Apr-14		3V	1.0
		24-Apr-14	FD	3V	1.0
		13-Nov-14		MP	0.93
MW-35-135	DA	13-Nov-14		MP	0.84

TABLE C-1
Arsenic Results in Monitoring Wells, March 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Sample Method	Dissolved Arsenic (µg/L)
MW-36-20	SA	15-Dec-14		MP	1.7
MW-36-40	SA	15-Dec-14		MP	4.7
MW-36-50	MA	15-Dec-14		MP	4.3
MW-36-70	MA	15-Dec-14		MP	3.3
MW-36-90	DA	17-Apr-14		3V	19.0
		15-Dec-14		MP	25.0
MW-36-100	DA	17-Apr-14		3V	8.5
		13-Nov-14		MP	8.9
MW-37S	MA	12-Nov-14		MP	1.8
MW-38D	DA	14-May-14		3V	6.5
		05-Nov-14		3V	7.4
MW-38S	SA	14-May-14		3V	11.0
		22-Sep-14		3V	14.0
		05-Nov-14		3V	13.0
		09-Feb-15		3V	14.0
MW-39-40	SA	16-Dec-14		MP	21.0
MW-39-50	MA	16-Dec-14		MP	3.1
MW-39-60	MA	16-Dec-14		MP	5.3
		16-Dec-14	FD	MP	6.1
MW-39-100	DA	01-Dec-14		MP	2.0
MW-40D	DA	24-Apr-14		3V	3.9
		04-Dec-14		MP	4.5
MW-40S	SA	04-Dec-14		MP	1.2
MW-41D	DA	17-Dec-14		MP	2.9
MW-41M	DA	04-Nov-14		MP	1.9
		04-Nov-14	FD	MP	1.9
MW-41S	SA	04-Nov-14		MP	1.8
MW-42-30	SA	05-Nov-14		MP	3.8
MW-42-55	MA	14-Apr-14		3V	11.0
		06-Nov-14		MP	18.0
MW-42-65	MA	14-Apr-14		3V	3.0
		06-Nov-14		MP	3.6
MW-43-25	SA	15-Apr-14		3V	16.0
		05-Nov-14		MP	23.0
MW-43-75	DA	05-Nov-14		MP	13.0

TABLE C-1
Arsenic Results in Monitoring Wells, March 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Sample Method	Dissolved Arsenic (µg/L)
MW-43-90	DA	15-Apr-14		3V	3.1
		05-Nov-14		MP	2.9
MW-44-70	MA	16-Apr-14		3V	4.2
		11-Nov-14		MP	4.5
MW-44-115	DA	16-Apr-14		3V	5.8
		23-Sep-14		MP	5.5
		23-Sep-14	FD	MP	5.5
		12-Nov-14		MP	5.4
		17-Feb-15		MP	5.6
		17-Feb-15	FD	MP	5.5
MW-44-125	DA	16-Apr-14		3V	2.7
		16-Apr-14	FD	3V	3.2
		12-Nov-14		MP	3.3
		12-Nov-14	FD	MP	3.2
MW-47-55	SA	11-Nov-14		MP	1.1
MW-49-135	DA	22-Dec-14		MP	1.6
MW-50-200	DA	16-Dec-14		MP	3.1
MW-51	MA	12-May-14		3V	3.9
		15-Dec-14		MP	3.7
MW-52D	DA	30-Apr-14		MP	3.3
		17-Dec-14		MP	3.5
MW-52M	DA	30-Apr-14		MP	1.4
		17-Dec-14		MP	1.8
MW-52S	MA	30-Apr-14		MP	0.21
		17-Dec-14		MP	0.16
MW-53D	DA	30-Apr-14		MP	3.4
		17-Dec-14		MP	2.9
MW-53M	DA	30-Apr-14		MP	0.84
		17-Dec-14		MP	0.85
MW-54-85	DA	09-Apr-14		3V	3.5
		18-Nov-14		MP	3.5
		18-Nov-14	FD	MP	3.6
MW-54-140	DA	09-Apr-14		3V	2.6
		09-Apr-14	FD	3V	1.4
		18-Nov-14		MP	3.1
MW-54-195	DA	09-Apr-14		3V	0.23

TABLE C-1
Arsenic Results in Monitoring Wells, March 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Dissolved Arsenic (µg/L)
MW-54-195	DA	18-Nov-14	MP	ND (1.0)
MW-57-070	BR	10-Dec-14	3V	1.4
MW-57-185	BR	22-Apr-14	3V	13.0
		10-Nov-14	3V	12.0
MW-58BR	BR	06-May-14	MP	1.0
		24-Sep-14	MP	1.1
		09-Dec-14	MP	1.1
		10-Feb-15	MP	1.2
MW-59-100	SA	07-May-14	3V	2.1
		15-Dec-14	MP	2.1
		15-Dec-14 FD	MP	2.0
MW-60-125	BR	01-May-14	3V	1.5
		10-Dec-14	3V	1.8
MW-60BR-245	BR	29-Apr-14	3V	6.8
		25-Sep-14	3V	4.9
		04-Dec-14	3V	6.8
		10-Feb-15	3V	6.2
MW-61-110	BR	29-Apr-14	3V	3.1
		10-Dec-14	3V	3.4
MW-62-065	BR	23-Sep-14	3V	1.3
		09-Dec-14	3V	1.4
		16-Feb-15	3V	1.5
		16-Feb-15 FD	3V	1.5
MW-62-110	BR	07-May-14	3V	6.0
		23-Sep-14	3V	6.4
		09-Dec-14	3V	6.7
		11-Feb-15	3V	6.3
MW-62-190	BR	07-May-14	3V	3.6
		09-Dec-14	MP	4.7
MW-63-065	BR	09-Apr-14	3V	1.5
		22-Sep-14	3V	1.5
		05-Nov-14	3V	1.4
		10-Feb-15	3V	1.4
MW-64BR	BR	06-May-14	MP	2.9
		30-Sep-14	MP	2.0
		08-Dec-14	MP	3.0

TABLE C-1
Arsenic Results in Monitoring Wells, March 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Sample Method	Dissolved Arsenic (µg/L)
MW-64BR	BR	18-Feb-15		MP	2.8
MW-65-160	SA	24-Apr-14		3V	0.72
		25-Sep-14		MP	0.80
		03-Dec-14		MP	0.61
		24-Mar-15		MP	0.67
MW-65-225	DA	29-Apr-14		3V	2.2
		25-Sep-14		MP	2.6
		03-Dec-14		MP	2.9
		17-Feb-15		MP	2.8
MW-66-165	SA	01-May-14		3V	1.2
		01-May-14	FD	3V	1.3
		10-Dec-14		MP	1.1
MW-66-230	DA	07-May-14		3V	8.5
		22-Dec-14		MP	6.6
MW-66BR-270	BR	13-May-14		3V	ND (0.50)
		16-Dec-14		3V	ND (0.50)
MW-67-185	SA	05-May-14		3V	1.5
		11-Dec-14		MP	1.2
MW-67-225	MA	06-May-14		3V	3.1
		11-Dec-14		MP	3.1
MW-67-260	DA	05-May-14		3V	11.0
		11-Dec-14		MP	8.0
MW-68-180	SA	12-May-14		3V	2.9
		30-Sep-14		MP	2.5
		09-Dec-14		MP	2.5
		18-Feb-15		MP	2.4
MW-68-240	DA	06-May-14		3V	1.9
		06-May-14	FD	3V	1.8
		18-Dec-14		MP	1.6
MW-68BR-280	BR	13-May-14		3V	1.3
		18-Dec-14		3V	1.2
MW-69-195	BR	01-May-14		3V	2.3
		25-Sep-14		3V	2.5
		25-Sep-14	FD	3V	2.3
		11-Dec-14		3V	2.5
		17-Feb-15		3V	2.3

TABLE C-1
Arsenic Results in Monitoring Wells, March 2014 through March 2015
First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Sample Method	Dissolved Arsenic (µg/L)
MW-70-105	BR	28-Apr-14	3V	4.6
		02-Dec-14	3V	4.5
MW-70BR-225	BR	05-May-14	3V	1.9
		16-Dec-14	3V	1.9
MW-71-035	SA	24-Apr-14	3V	1.3
		06-Nov-14	MP	1.3
MW-72-080	BR	24-Apr-14	3V	10.0
		22-Sep-14	3V	9.4
		01-Dec-14	3V	12.0
		11-Feb-15	3V	12.0
MW-72BR-200	BR	21-Apr-14	3V	14.0
		24-Sep-14	3V	14.0
		17-Nov-14	3V	16.0
		11-Feb-15	3V	14.0
MW-73-080	BR	29-Apr-14	3V	1.4
		23-Sep-14	3V	2.0
		02-Dec-14	3V	1.4
		10-Feb-15	3V	2.9
MW-74-240	BR	01-May-14	3V	12.0
		11-Dec-14	3V	9.7

Notes:

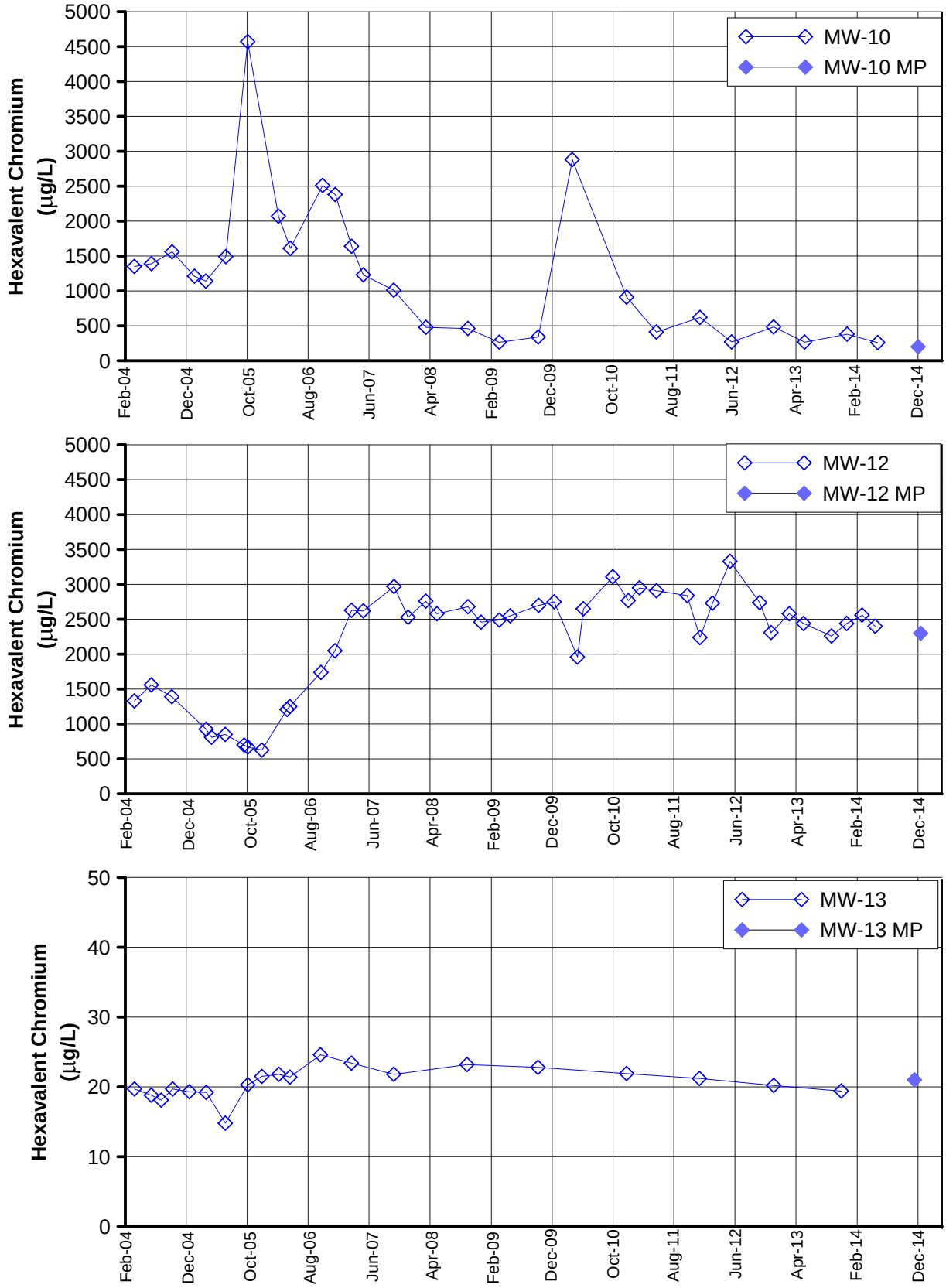
3V = three volume.
FD = field duplicate.
J = concentration or reporting limit estimated by laboratory or data validation.
MP = minimal drawdown/micro purge.
ND = not detected at listed reporting limit.
µg/L = micrograms per liter.

Starting in Third Quarter 2014, the groundwater sample collection method was switched from the traditional three-volume purge method (3V) to the minimal drawdown, or micropurge (MP) method at many short screen wells screened in alluvial sediments. The method for purging prior to sample collection is indicated in the sample method column of this table.

The California primary drinking water standard maximum contaminant level (MCL) for arsenic is 10 µg/L.
The Background Study Upper Tolerance Limit for arsenic at the site is 24.3 µg/L.

Wells are assigned to separate Aquifer zones for results reporting:
SA = shallow interval of Alluvial Aquifer.
MA = mid-depth interval of Alluvial Aquifer.
DA = deep interval of Alluvial Aquifer.
BR = well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

Appendix D
Groundwater Monitoring Data for GMP and Interim Measures Monitoring Wells

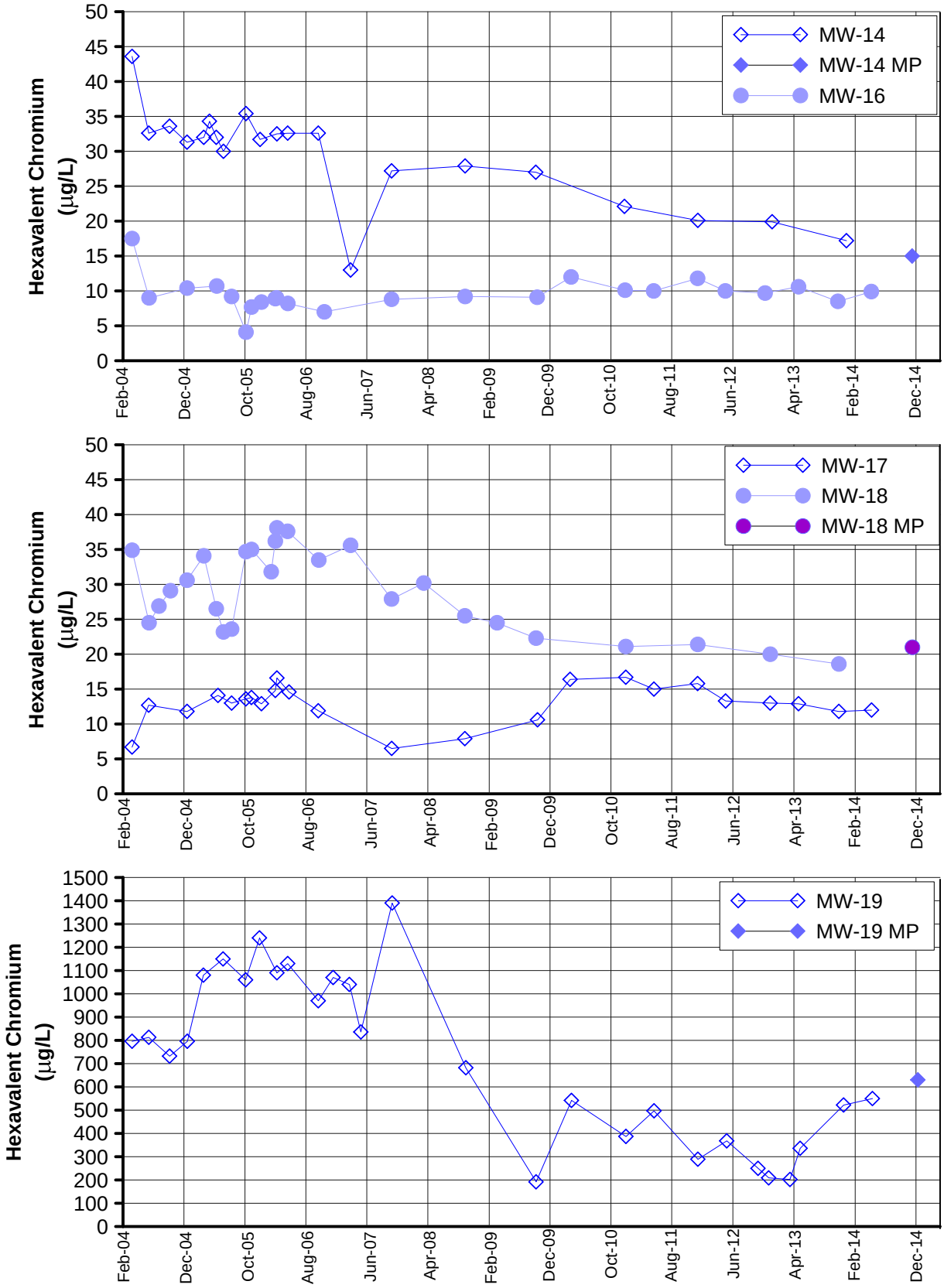


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-1
HEXAVALENT CHROMIUM
IN MW-10, MW-12, AND MW-13
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

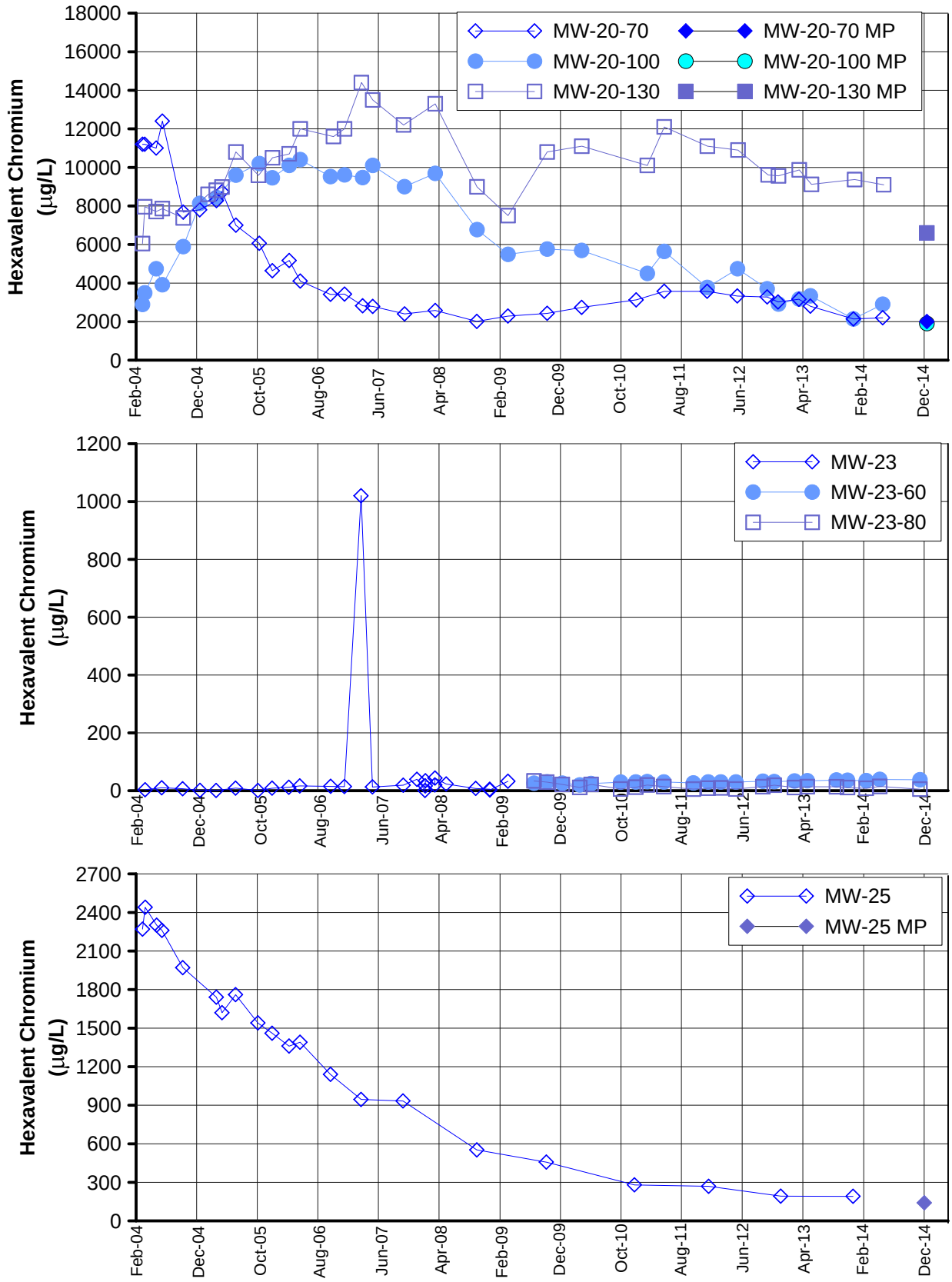


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-2
HEXAVALENT CHROMIUM
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

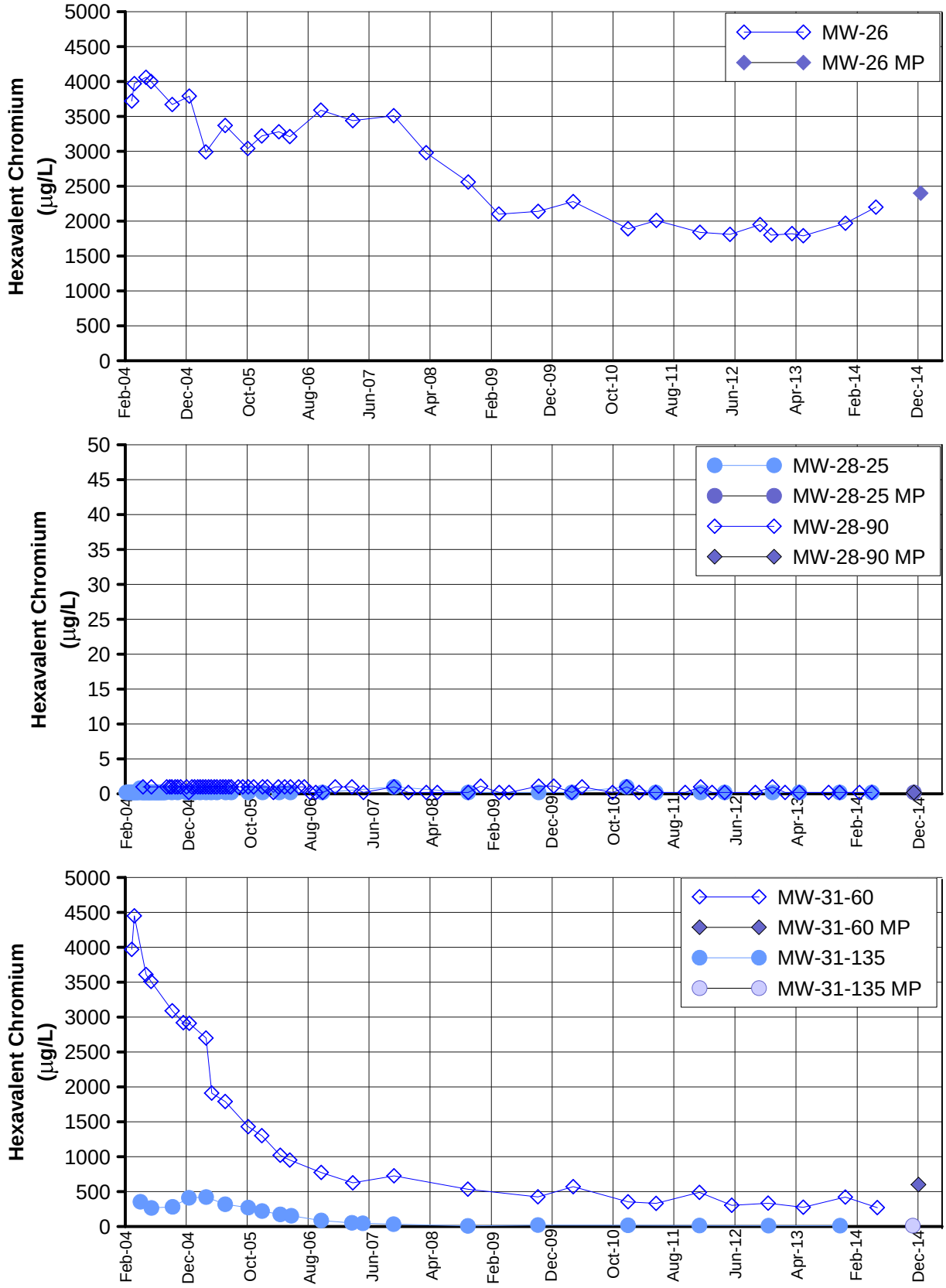


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-3
HEXAVALENT CHROMIUM
IN MW-20 AND MW-23 CLUSTERS AND MW-25
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

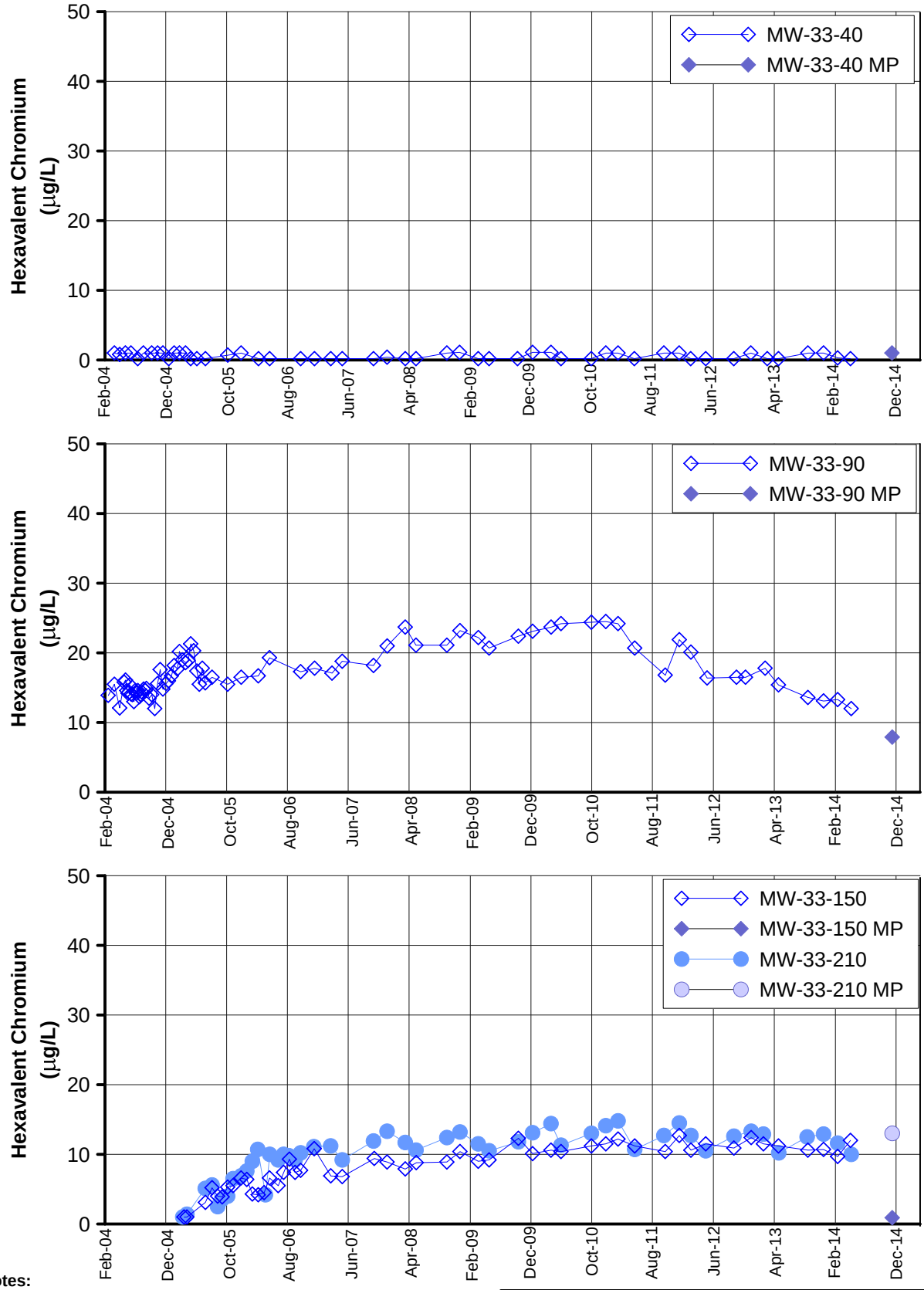


Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-28-90 is 20 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-4
HEXAVALENT CHROMIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

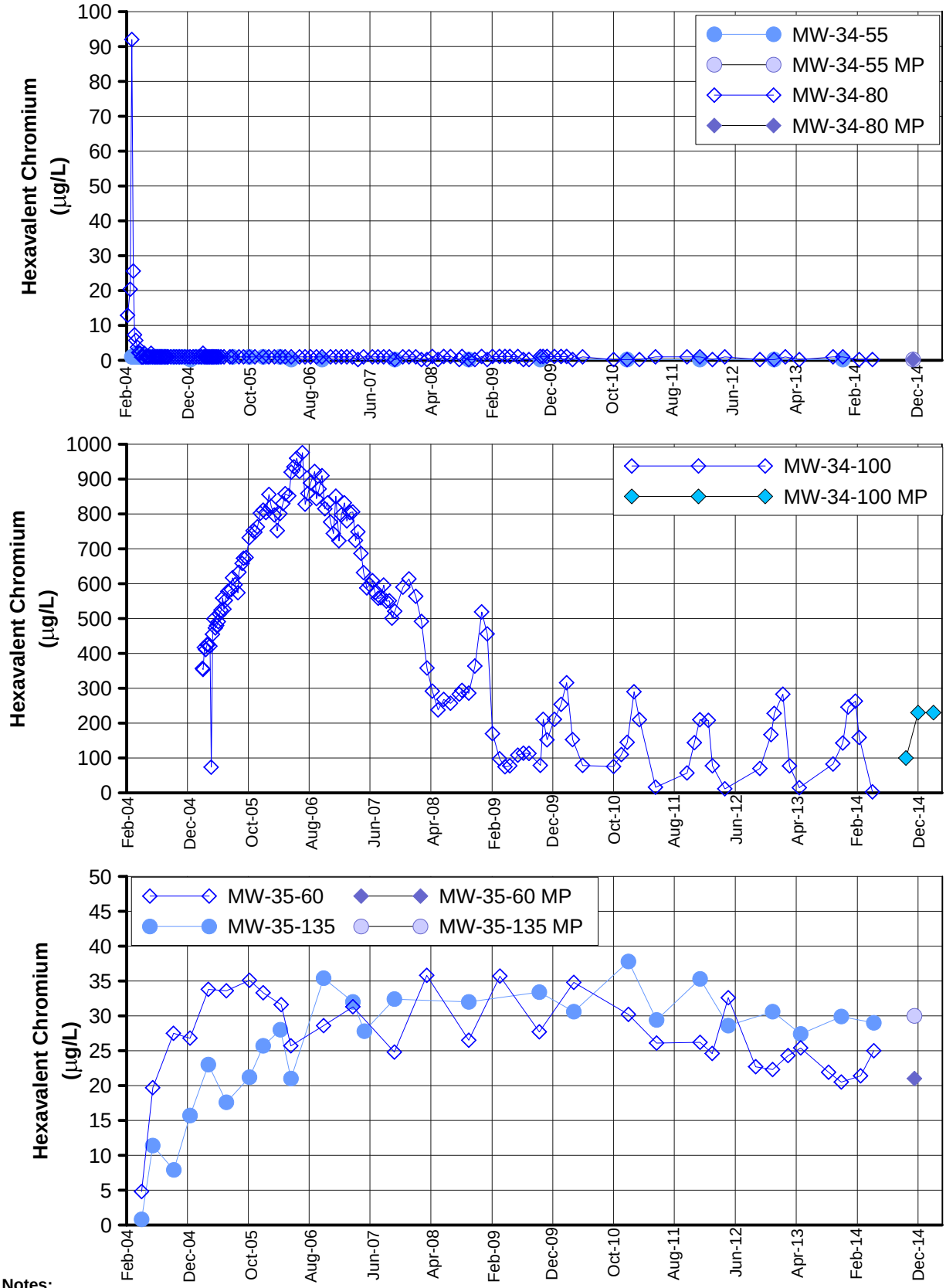
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-33-40 is 20 µg/L.
3) The trigger level for MW-33-90 is 25 µg/L.
4) The trigger level for MW-33-150 is 20 µg/L.
5) The trigger level for MW-33-210 is 20 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-5
HEXAVALENT CHROMIUM
IN MW-33 CLUSTER

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

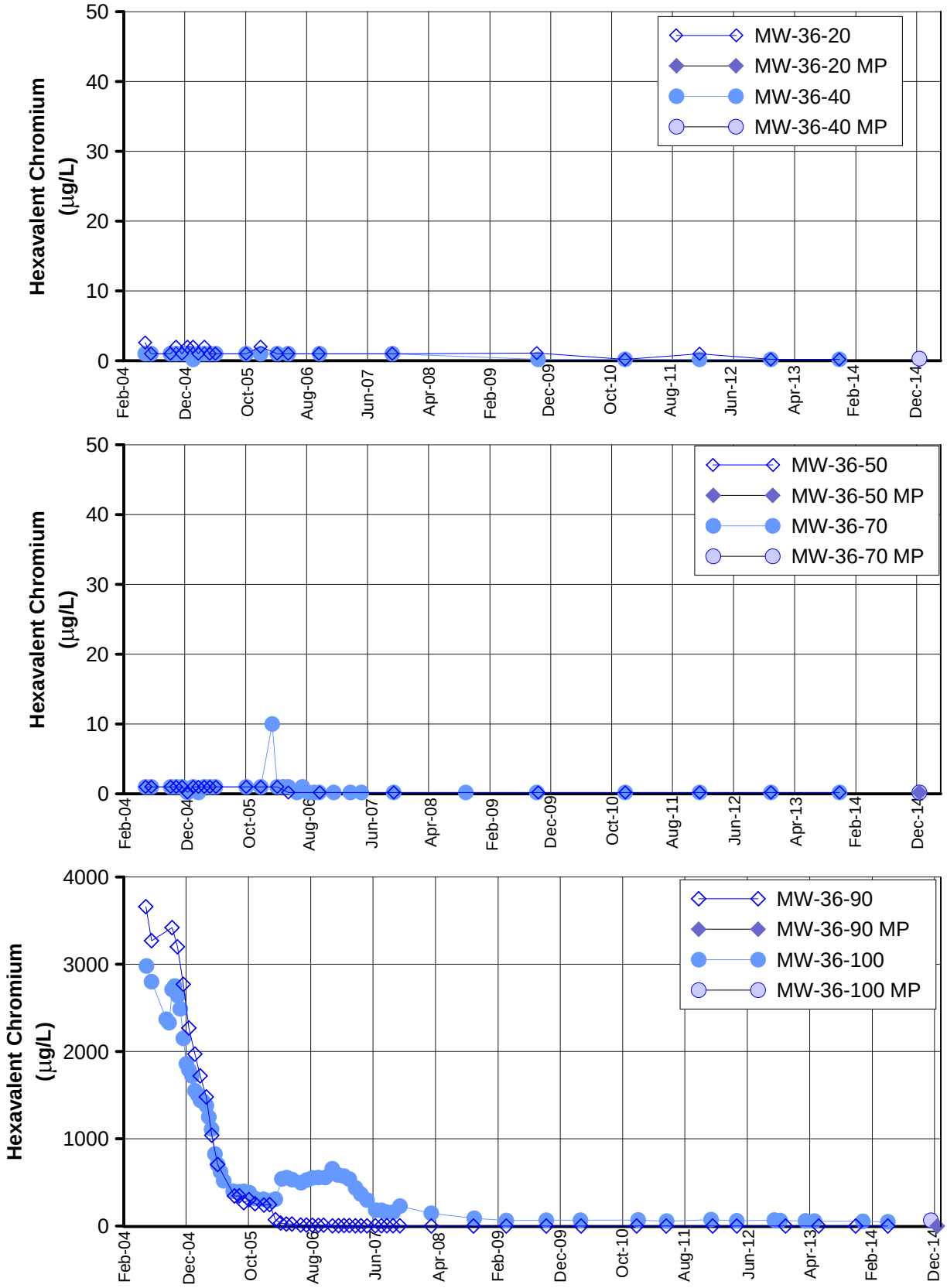
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-34-80 is 20 µg/L.
3) The trigger level for MW-34-100 is 750 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-6
HEXAVALENT CHROMIUM
IN MW-34 AND MW-35 CLUSTERS

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

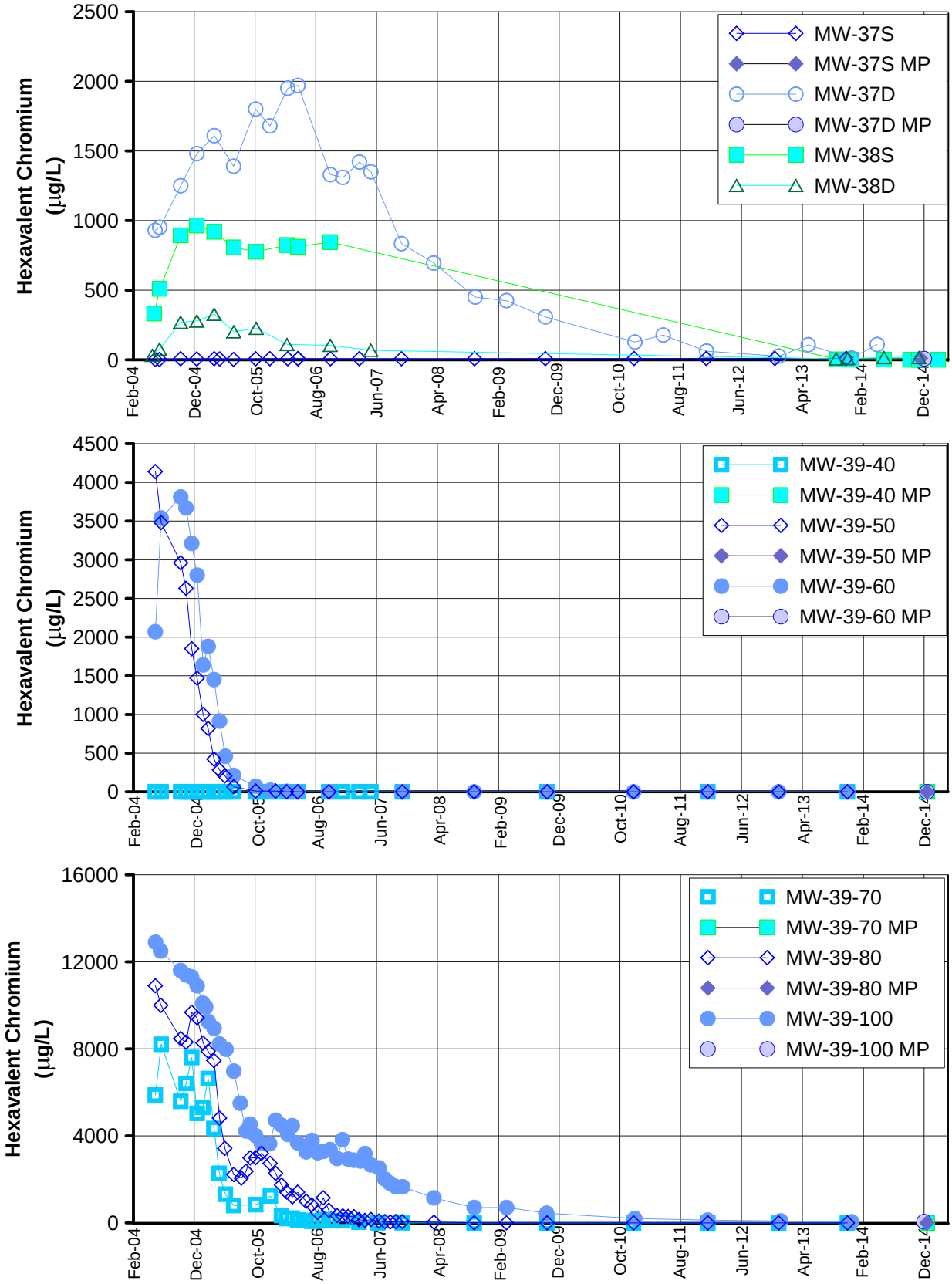


Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-36-70 is 20 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-7
HEXAVALENT CHROMIUM
IN MW-36 CLUSTER
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

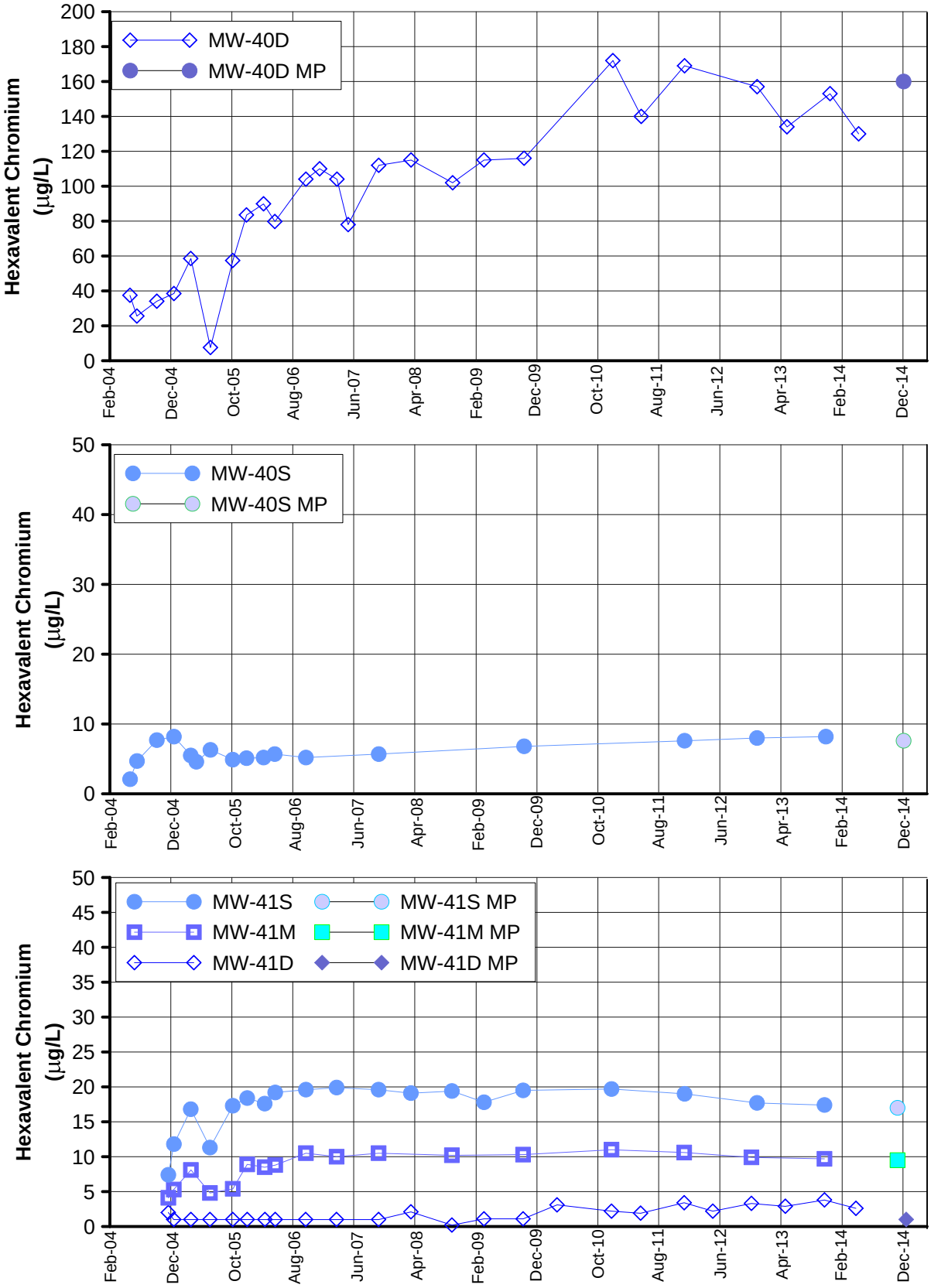
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-39-40 is 20 µg/L.
3) For MW-38 data from July 2007 - January 2010, please see: ARCADIS. 2014. *2014 Annual Monitoring Report for the Upland Reductive Zone In-Situ Pilot Test*. November 19.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-8
HEXAVALENT CHROMIUM
IN MW-37, MW-38, AND MW-39 CLUSTERS

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

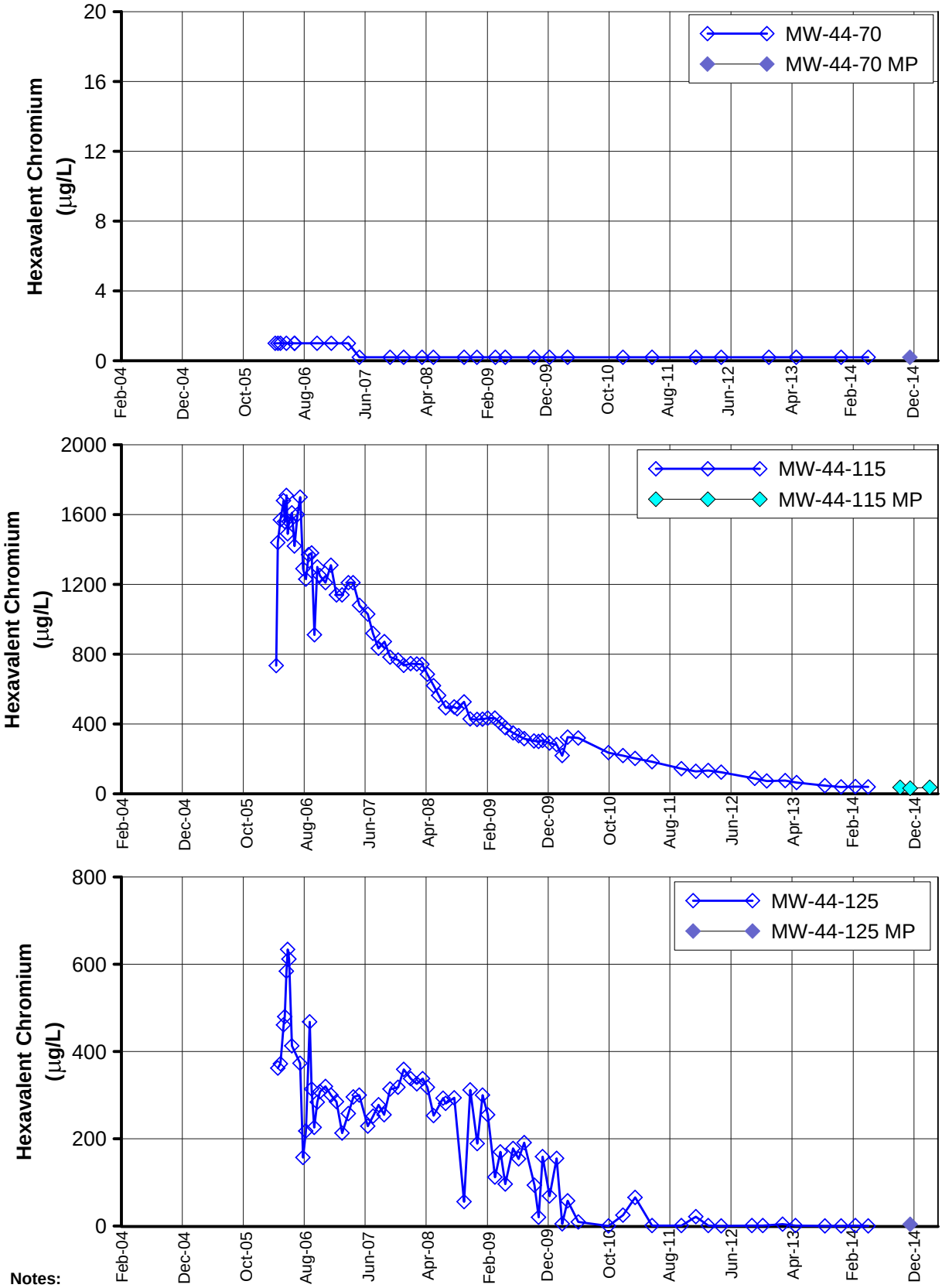


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-9
HEXAVALENT CHROMIUM
IN MW-40 AND MW-41 CLUSTERS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

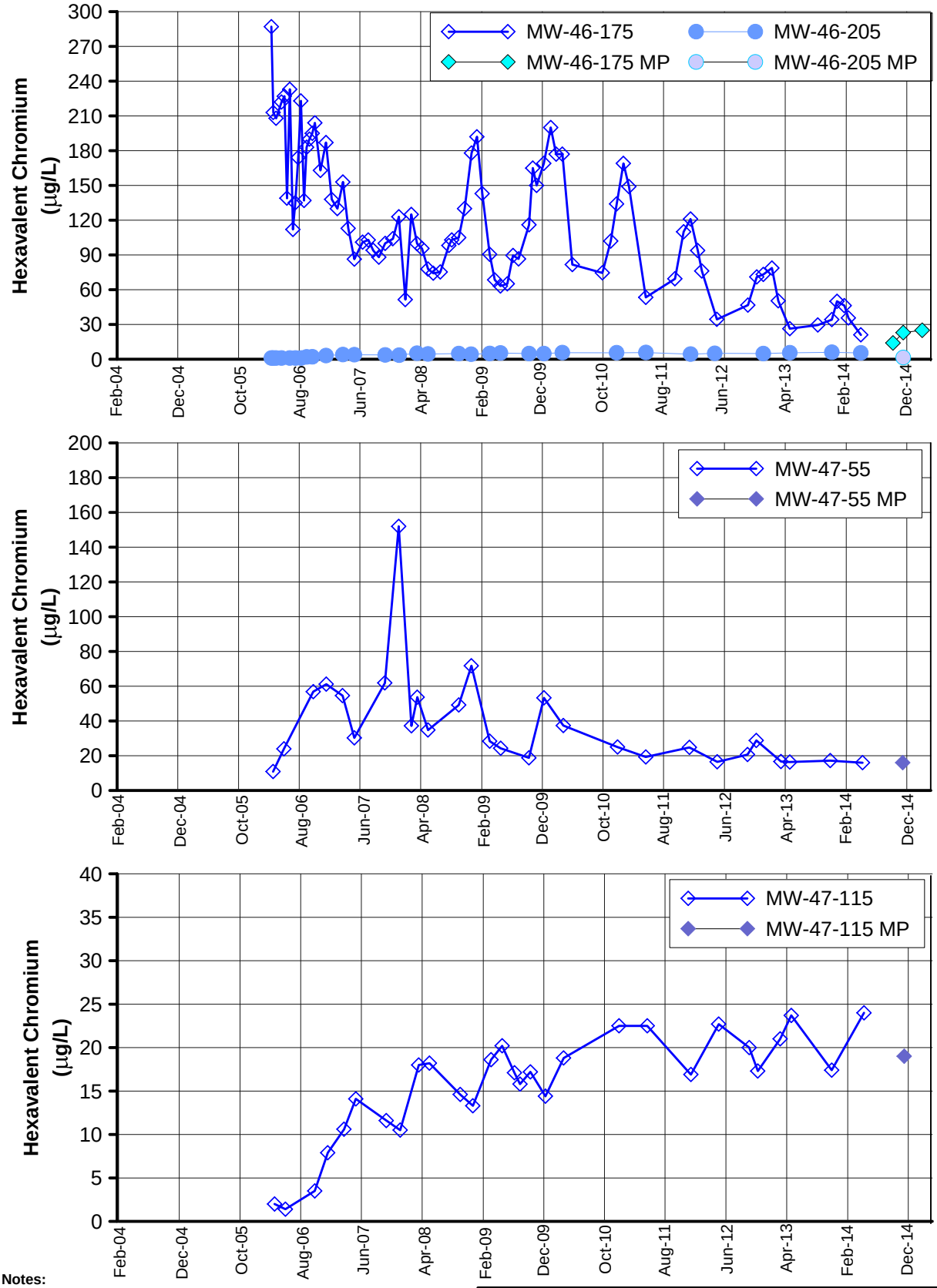
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-44-70 is 20 µg/L.
3) The trigger level for MW-44-115 is 1,200 µg/L.
4) The trigger level for MW-44-125 is 475 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-10
HEXAVALENT CHROMIUM
IN MW-44 CLUSTER

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

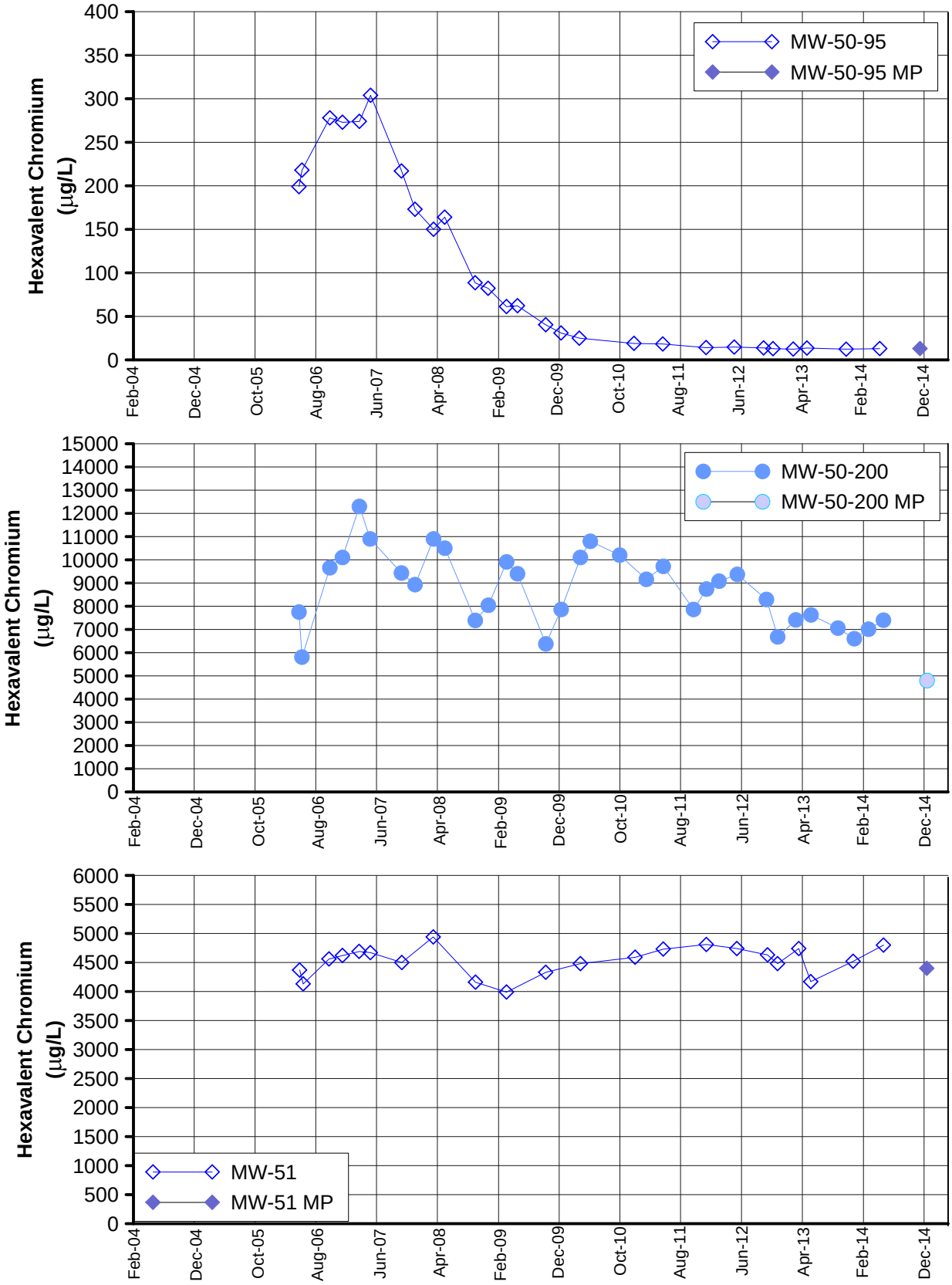
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-46-175 is 225 µg/L.
3) The trigger level for MW-46-205 is 20 µg/L.
4) The trigger level for MW-47-55 is 475 µg/L.
5) The trigger level for MW-47-115 is 31 µg/L.

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-11
HEXAVALENT CHROMIUM
IN MW-46 AND MW-47 CLUSTERS

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

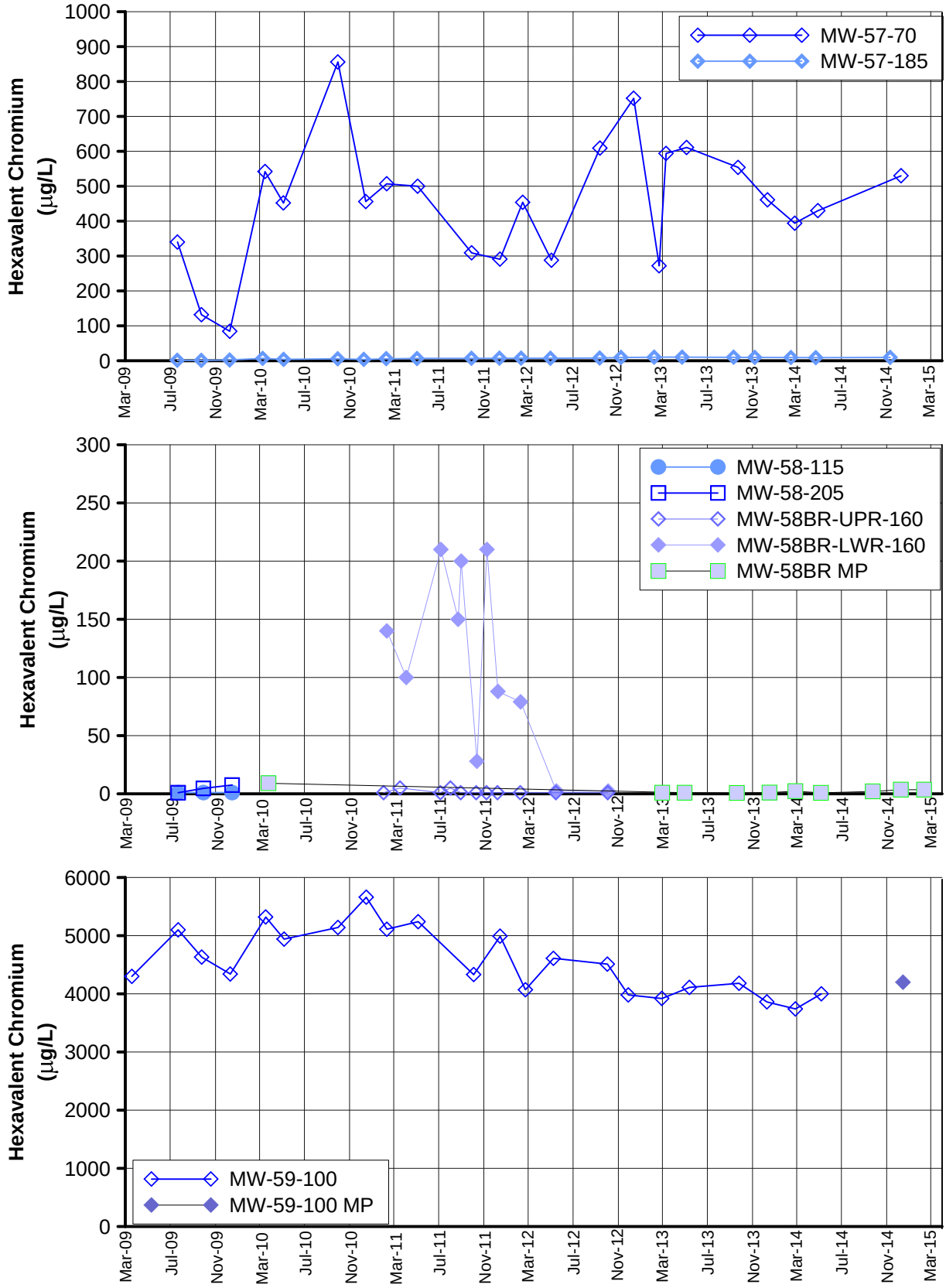


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-12
HEXAVALENT CHROMIUM
IN MW-50 AND MW-51 CLUSTERS
FIFTH QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Note:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-13
HEXAVALENT CHROMIUM
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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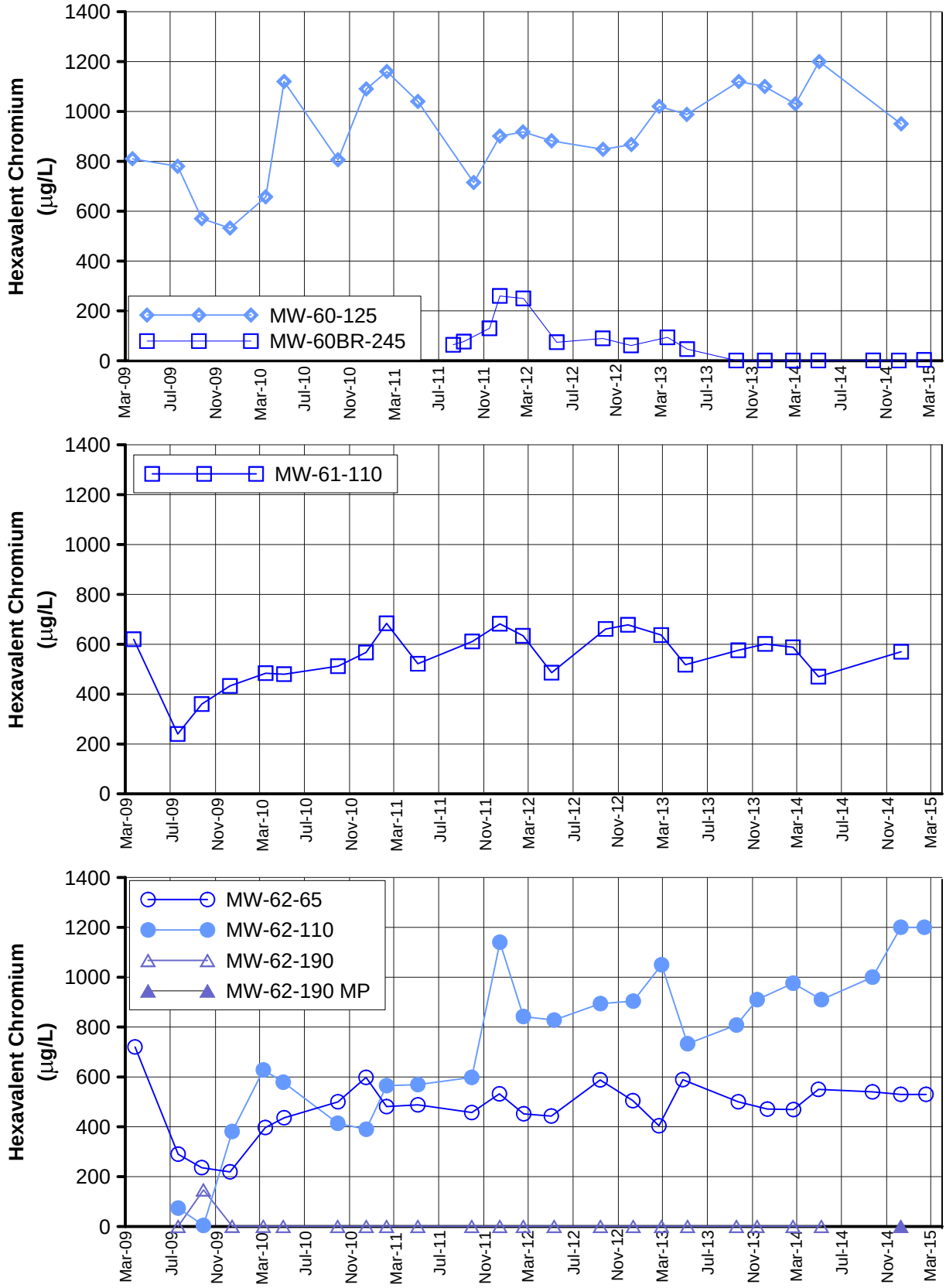

Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-14
HEXAVALENT CHROMIUM IN THE MW-60 CLUSTER, MW-61-110 AND THE MW-62 CLUSTER
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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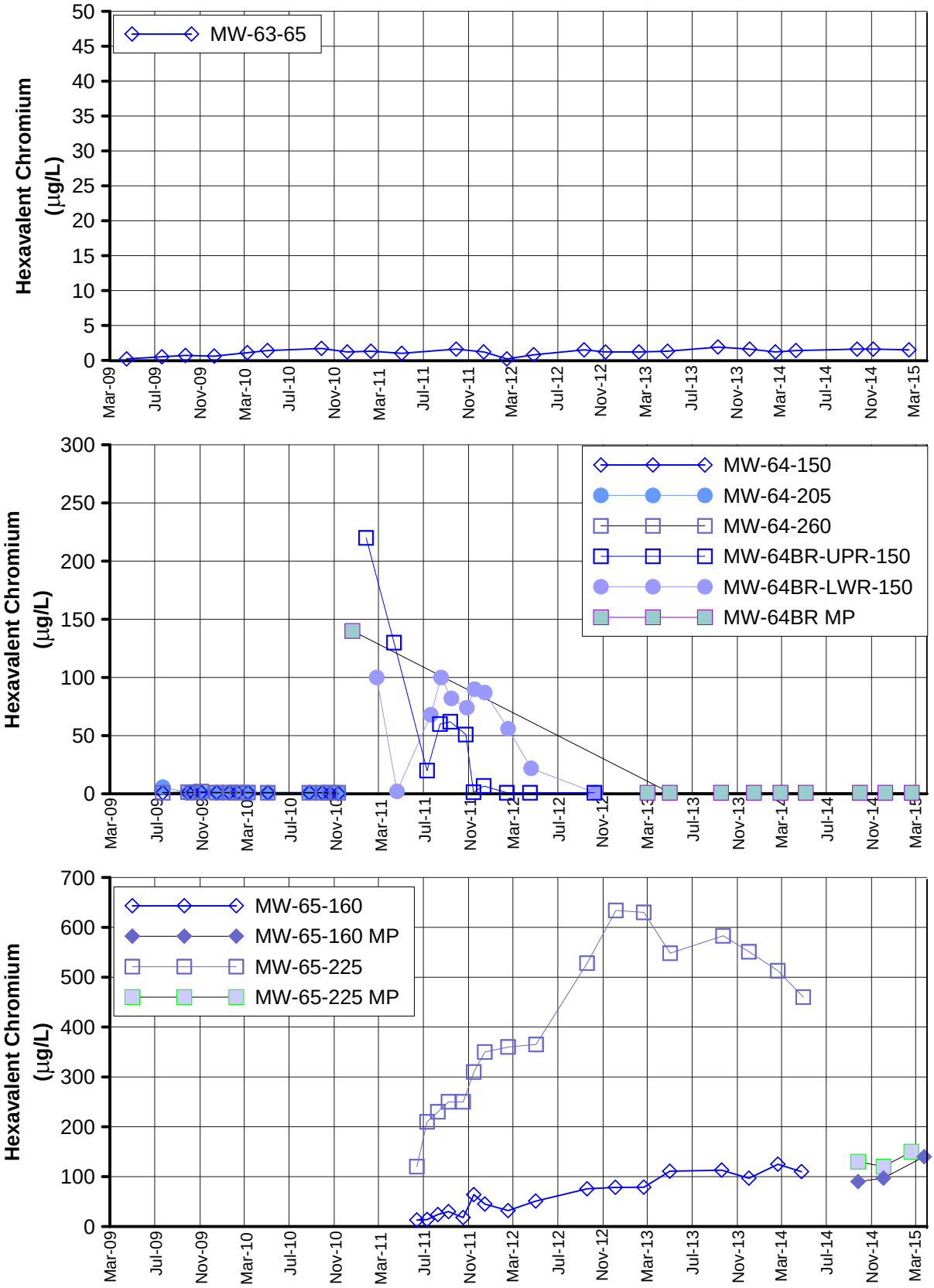
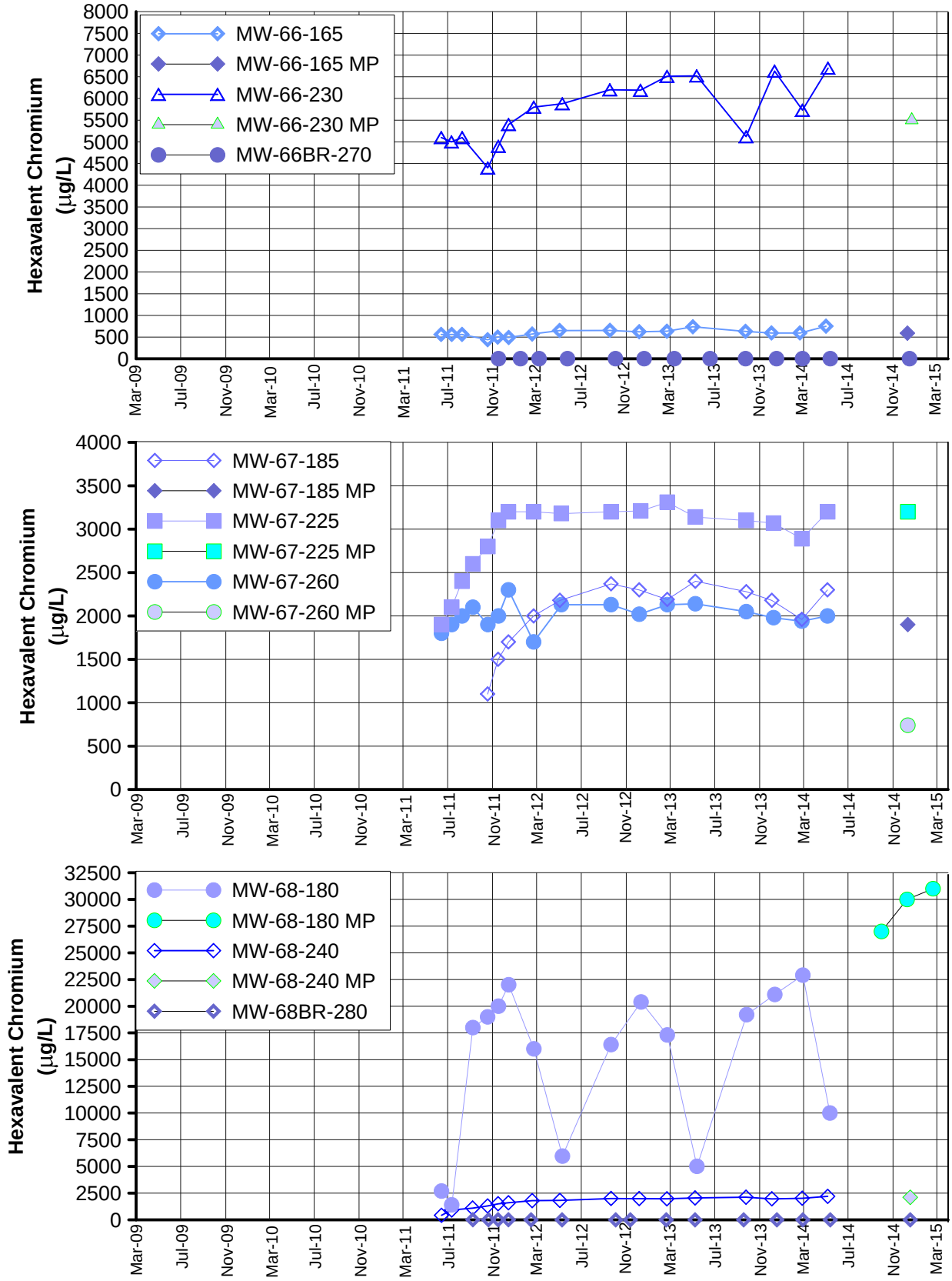


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-15
HEXAVALENT CHROMIUM
IN MW-63-65, MW-64 CLUSTER AND MW-65 CLUSTER
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

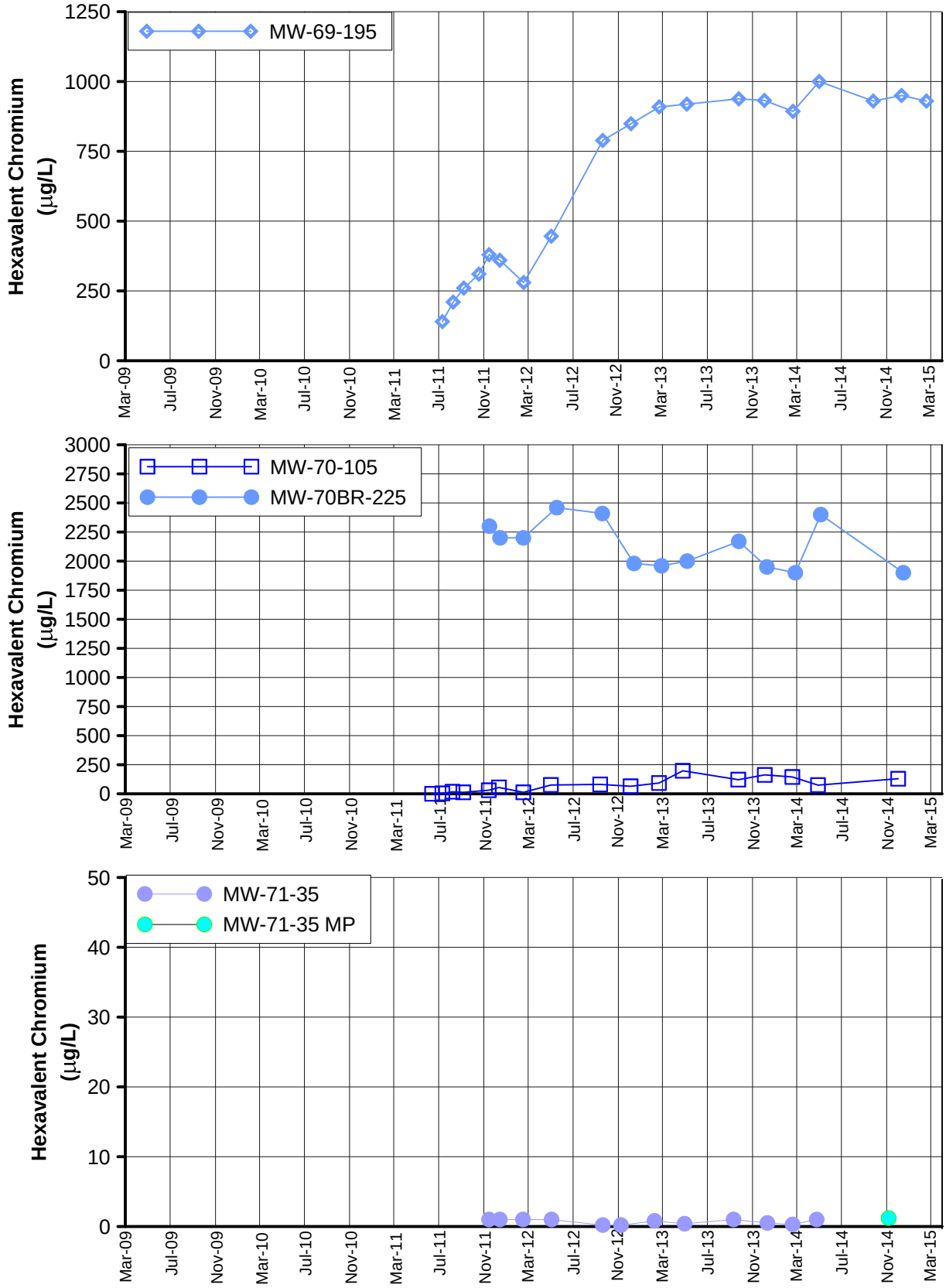


Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-16
HEXAVALENT CHROMIUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

MP = micropurge, hexavalent chromium sample collected using micropurge sampling method. Data not indicated with (MP) was collected using the three-volume purge sampling method.

FIGURE D-17
HEXAVALENT CHROMIUM
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-35
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

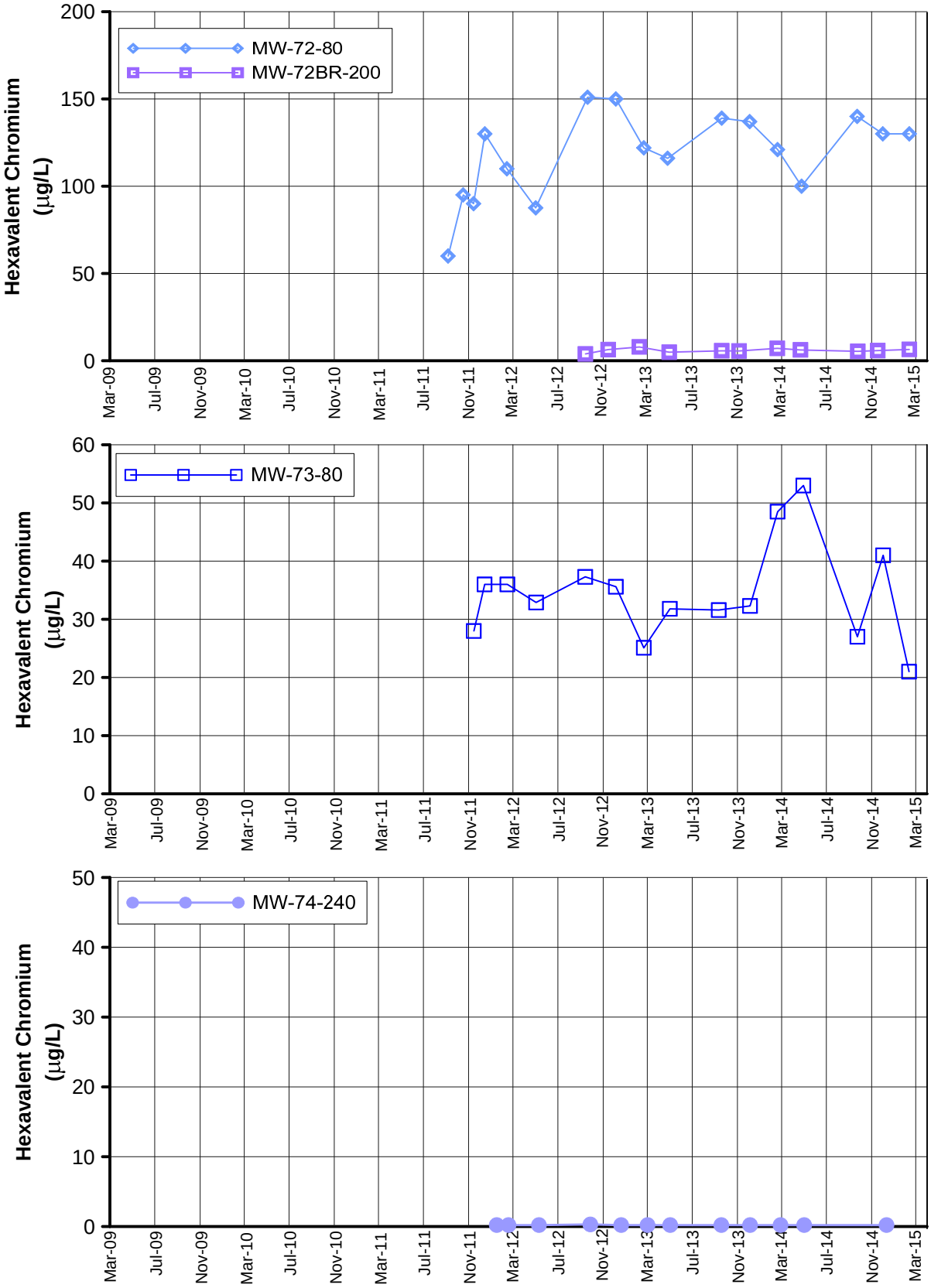


FIGURE D-18
HEXAVALENT CHROMIUM
IN MW-72 CLUSTER, MW-73-80, AND MW-74-240
FIFTH QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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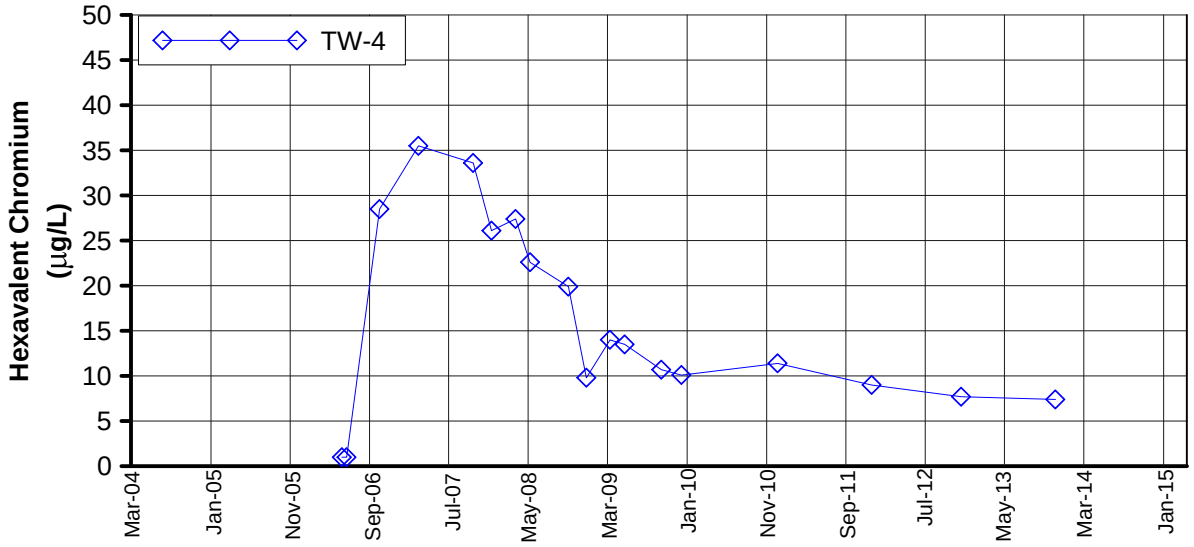

FIGURE D-19
HEXAVALENT CHROMIUM
IN TW-4
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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Appendix E
Interim Measures Extraction System Operations Log, First Quarter 2015

APPENDIX E

Interim Measures Extraction System Operations Log, First Quarter 2015, PG&E Topock Performance Monitoring Program

During First Quarter 2015 (January through March), extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute, excluding periods of planned and unplanned downtime. Extraction well TW-2D operated on March 10, 2015. Extraction well TW-2S did not operate during First Quarter 2015. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 97.6 percent during First Quarter 2015.

The Interim Measure Number 3 (IM-3) facility treated approximately 17,097,717 gallons of extracted groundwater during First Quarter 2015. The IM-3 facility also treated approximately 150 gallons of water generated from the groundwater monitoring program and 9,000 gallons of water from IM-3 well backwashing. Eight containers of solids from the IM-3 facility were transported offsite during the reporting period.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 2.4 percent of downtime during First Quarter 2015) are summarized below. The times shown are in Pacific Standard Time to be consistent with other data collected (for example, water level data) at the site.

E.1 January 2015

- **January 5, 2015 (unplanned):** The extraction well system was offline from 1:20 a.m. to 3:08 a.m. due to the failure of a belt on the air compressor. Extraction system downtime was 1 hour, 48 minutes.
- **January 7, 2015 (planned):** The extraction well system was offline from 2:40 p.m. to 2:42 p.m., 2:50 p.m. to 2:52 p.m., 3:00 p.m. to 3:02 p.m., 3:08 p.m. to 3:10 p.m., 3:12 p.m. to 3:14 p.m., 3:16 p.m. to 3:18 p.m., and 3:22 p.m. to 3:24 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 14 minutes.
- **January 10, 2015 (unplanned):** The extraction well system was offline from 12:42 a.m. to 1:56 a.m., 2:44 a.m. to 3:46 a.m. and 4:10 a.m. to 7:00 a.m. to clean the microfilter and process drain tank (T-900) strainers and adjust pH levels in the flow to the treated water storage tank (T-700). Extraction system downtime was 5 hours, 6 minutes.
- **January 15, 2015 (unplanned):** The extraction well system was offline from 3:16 a.m. to 3:38 a.m. and 4:04 a.m. to 4:22 a.m. due to high-level alarms in the reverse osmosis feed tank (T-600). Extraction system downtime was 40 minutes.
- **January 16, 2015 (unplanned):** The extraction well system was offline from 2:22 a.m. to 2:26 a.m. due to the shutdown of the air compressor. Extraction system downtime was 4 minutes.
- **January 21, 2015 (unplanned):** The extraction well system was offline from 8:54 a.m. to 7:52 p.m. and 8:12 p.m. to 9:50 p.m. to replace the microfilter actuator valve and a seal in the recirculation pump (P-501). Extraction system downtime was 12 hours, 36 minutes.
- **January 31, 2015 (unplanned):** The extraction well system was offline from 6:04 p.m. to 7:06 p.m. due to loss of power from the City of Needles. Extraction system downtime was 1 hour, 2 minutes.

E.2 February 2015

- **February 5, 2015 (planned):** The extraction well system was offline from 9:20 a.m. to 9:26 a.m., 9:40 a.m. to 9:42 a.m., 9:54 a.m. to 9:56 a.m. and 10:08 a.m. to 10:10 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 12 minutes.
- **February 5, 2015 (planned):** The extraction well system was offline from 12:58 p.m. to 1:06 p.m. to run specific capacity and injectivity tests on the injection wells. Extraction system downtime was 8 minutes.
- **February 10, 2015 (unplanned):** The extraction well system was offline from 10:24 a.m. to 10:52 a.m. to clean the raw water storage tank (T-100) strainer and the ferrous flow meter (FSL-201). Extraction system downtime 28 minutes.

E.3 March 2015

- **March 8, 2015 (unplanned):** The extraction well system was offline from 8:50 p.m. to 10:56 p.m. due to shutdown of the air compressor. Extraction system downtime was 2 hour, 6 minutes.
- **March 10, 2015 (planned):** The extraction well system was offline from 11:08 a.m. to 11:10 am, 11:16 a.m. to 11:18 am, and 11:34 a.m. to 11:36 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 6 minutes.
- **March 11, 2015 (planned):** The extraction well system was offline from 5:56 a.m. to 1:04 p.m. for maintenance activities, including removal of a blockage in the piping between the chromium reduction reactor (T-300) and the first iron oxidation reactor (T-301A), installation of a new microfilter pump (P-501), repair of a microfilter pump (P-502), and repair of the clarifier feed pump (P-400). Extraction system downtime was 7 hours, 8 minutes.
- **March 11, 2015 (unplanned):** The extraction well system was offline from 9:34 p.m. to 9:46 a.m. due to a high-level alarm in the raw water storage tank (T-100). Extraction system downtime was 12 minutes.
- **March 11, 2015 (unplanned):** The extraction well system was offline from 11:16 p.m. to 11:38 p.m. due to failure of the raw water feed pump (P-200). Extraction system downtime was 22 minutes.
- **March 12, 2015 (unplanned):** The extraction well system was offline from 4:52 a.m. to 5:04 a.m. due to a high-level alarm in the raw water storage tank (T-100). Extraction system downtime was 12 minutes.
- **March 12, 2015 (planned):** The extraction well system was offline from 9:56 a.m. to 12:34 p.m. to perform maintenance at on the clarifier feed pump (P-400). Extraction system downtime was 2 hours, 38 minutes.
- **March 13, 2015 (unplanned):** The extraction well system was offline from 8:28 a.m. to 10:00 a.m. due to a high-level alarm in the third iron oxidation reactor (T-301C). Extraction system downtime was 1 hour, 32 minutes.
- **March 13, 2015 (unplanned):** The extraction well system was offline from 1:08 p.m. to 1:34 p.m. due to a high-level alarm in the third iron oxidation reactor (T-301C). Extraction system downtime was 26 minutes.
- **March 14, 2015 (unplanned):** The extraction well system was offline from 1:48 a.m. to 3:06 a.m. due to a high-level alarm in the third iron oxidation reactor (T-301C). Extraction system downtime was 1 hour, 18 minutes.
- **March 14, 2015 (unplanned):** The extraction well system was offline from 7:00 a.m. to 8:54 a.m. to repair the clarifier feed pump (P-400). Extraction system downtime was 1 hour, 54 minutes.

- **March 15, 2015 (unplanned):** The extraction well system was offline from 9:58 a.m. to 11:46 a.m. to change the microfilter modules. Extraction system downtime was 1 hour, 48 minutes.
- **March 15, 2015 (unplanned):** The extraction well system was offline from 10:54 p.m. to 11:12 p.m. due to a high level alarm in the third iron oxidation reactor (T-301C). Extraction system downtime was 18 minutes.
- **March 16, 2015 (unplanned):** The extraction well system was offline from 9:20 a.m. to 3:44 p.m. to replace the clarifier feed pump (P-400). Extraction system downtime was 6 hours, 24 minutes.
- **March 17, 2015 (unplanned):** The extraction well system was offline from 10:28 a.m. to 11:00 a.m. due to a high-level alarm in the third iron oxidation reactor (T-301C). Extraction system downtime was 32 minutes.
- **March 17-18, 2015 (unplanned):** The extraction well system was offline from 11:46 p.m. on March 17, 2015 to 12:56 a.m. on March 18, 2015 due to a high-level alarm in the third iron oxidation reactor (T-301C) and the raw water storage tank (T-100). Extraction system downtime was 1 hour, 10 minutes.
- **March 24, 2015 (unplanned):** The extraction well system was offline from 9:22 a.m. to 9:34 a.m. to clean the microfilter strainer. Extraction system downtime was 12 minutes.
- **March 25, 2015 (unplanned):** The extraction well system was offline from 8:22 a.m. to 8:36 a.m. and from 12:10 p.m. to 12:22 p.m. to repair the clarifier feed pump (P-400). Extraction system downtime was 26 minutes.
- **March 30, 2015 (unplanned):** The extraction well system was offline from 7:46 a.m. to 8:48 a.m. to change the microfilter modules. Extraction system downtime was 1 hour, 2 minutes.

Appendix F
Hydraulic Data for Interim Measures Reporting Period

TABLE F-1

Average Monthly and Quarterly Groundwater Elevations, First Quarter 2015

First Quarter 2015 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	January 2015	February 2015	March 2015	Quarter Average	Days in Quarter Average
I-3	River Station	454.36	454.52	456.29	455.10	86
MW-20-070	Shallow Zone	452.91	453.24	454.22	453.46	90
MW-20-100	Middle Zone	452.48	452.75	453.80	453.02	90
MW-20-130	Deep Zone	452.29	452.26	453.47	452.81	68
MW-22	Shallow Zone	453.93	454.32	455.48	454.59	89
MW-25	Shallow Zone	454.34	454.68	455.24	454.76	90
MW-26	Shallow Zone	454.10	454.36	454.96	454.48	90
MW-27-020	Shallow Zone	454.18	454.38	456.04	454.90	83
MW-27-060	Middle Zone	454.17	454.39	456.02	454.89	83
MW-27-085	Deep Zone	454.04	454.32	455.96	454.79	90
MW-28-025	Shallow Zone	453.65	454.54	455.98	INC	55
MW-28-090	Deep Zone	454.18	454.40	455.98	454.87	90
MW-30-050	Middle Zone	453.83	454.11	455.52	454.50	89
MW-31-060	Shallow Zone	453.79	454.11	455.15	454.36	90
MW-31-135	Deep Zone	453.13	453.36	454.45	453.66	90
MW-32-035	Shallow Zone	453.88	454.22	455.67	454.60	89
MW-33-040	Shallow Zone	454.06	454.37	455.59	454.68	90
MW-33-090	Middle Zone	454.24	454.58	455.87	454.91	90
MW-33-150	Deep Zone	454.21	454.50	455.73	454.83	90
MW-34-055	Middle Zone	454.14	454.39	456.03	454.85	88
MW-34-080	Deep Zone	454.24	454.48	456.07	454.93	88
MW-34-100	Deep Zone	453.77	454.03	455.63	454.49	90
MW-35-060	Shallow Zone	454.55	454.86	456.27	455.24	90
MW-35-135	Deep Zone	454.82	455.15	456.22	455.41	90
MW-36-020	Shallow Zone	453.92	454.23	455.52	454.57	89
MW-36-040	Shallow Zone	453.87	454.15	455.68	454.58	89
MW-36-050	Middle Zone	453.82	454.11	455.65	454.54	89
MW-36-070	Middle Zone	453.83	454.11	455.66	454.55	89
MW-36-090	Deep Zone	452.96	453.19	454.62	453.60	89
MW-36-100	Deep Zone	453.22	453.42	454.84	453.84	89
MW-39-040	Shallow Zone	453.74	454.02	455.46	454.42	89
MW-39-050	Middle Zone	453.58	453.86	455.29	454.26	89
MW-39-060	Middle Zone	453.39	453.66	455.06	454.05	89
MW-39-070	Middle Zone	452.27	453.38	454.50	INC	44
MW-39-080	Deep Zone	453.07	453.34	454.64	453.70	89
MW-39-100	Deep Zone	453.62	453.89	455.20	454.25	89
MW-42-030	Shallow Zone	453.88	453.92	455.29	454.45	74
MW-42-065	Middle Zone	453.73	454.04	455.44	454.41	88
MW-43-025	Shallow Zone	454.18	454.39	456.13	454.94	84
MW-43-090	Deep Zone	454.50	454.71	456.49	455.28	84
MW-44-070	Middle Zone	453.96	454.23	455.83	454.69	89
MW-44-115	Deep Zone	453.57	453.79	455.15	454.18	89
MW-44-125	Deep Zone	454.07	454.35	455.78	454.75	89
MW-45-095a	Deep Zone	452.76	452.99	454.53	453.44	90
MW-46-175	Deep Zone	454.19	454.44	455.74	454.80	90
MW-47-055	Shallow Zone	454.38	454.70	455.86	454.99	90
MW-47-115	Deep Zone	454.42	454.74	455.82	455.00	90
MW-49-135	Deep Zone	454.61	454.88	456.19	455.24	90

TABLE F-1

Average Monthly and Quarterly Groundwater Elevations, First Quarter 2015

First Quarter 2015 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

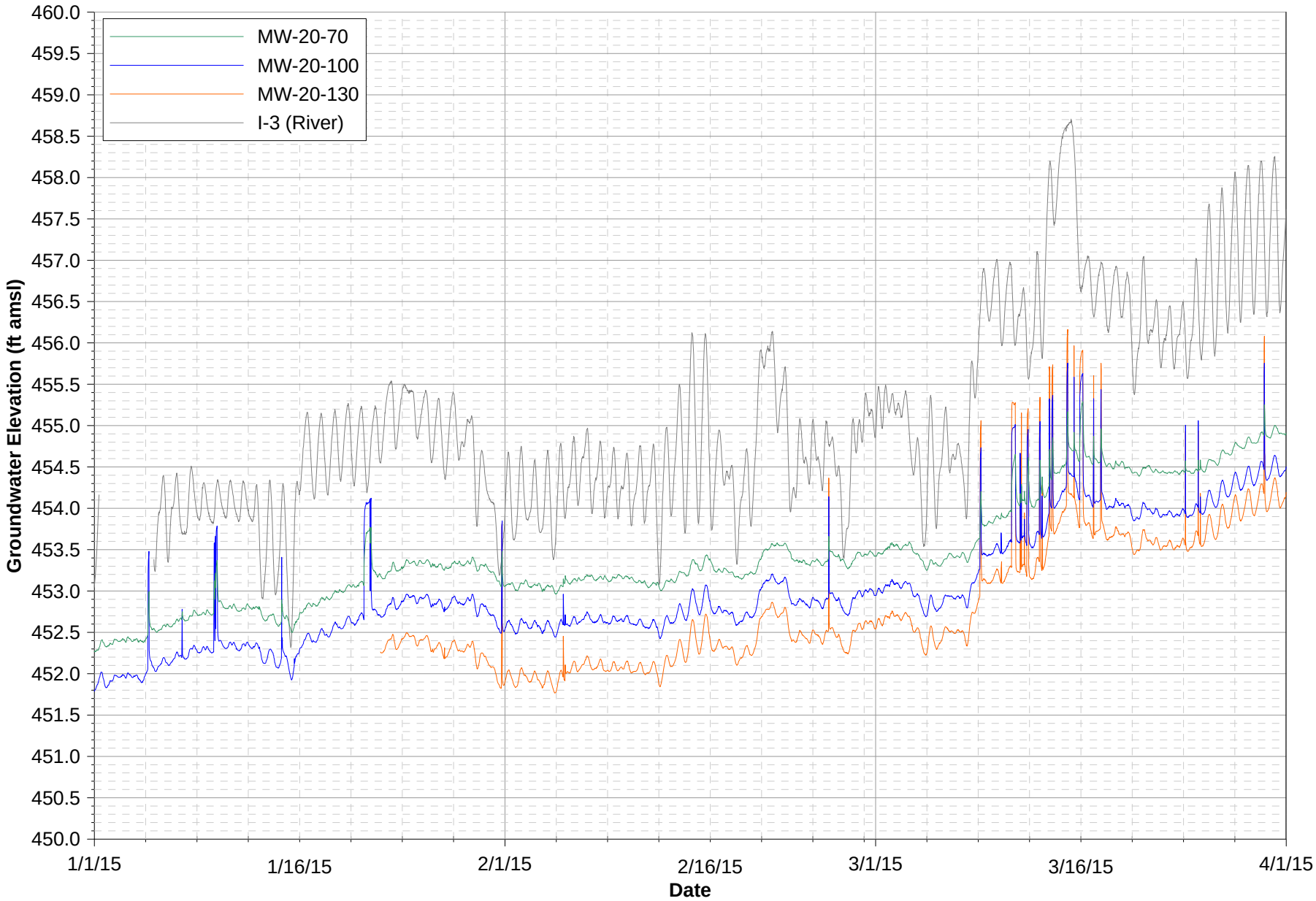
Well ID	Aquifer Zone	January 2015	February 2015	March 2015	Quarter Average	Days in Quarter Average
MW-50-095	Middle Zone	454.17	454.30	455.23	454.64	76
MW-51	Middle Zone	454.08	454.34	454.95	454.46	90
MW-54-085	Deep Zone	454.73	454.85	456.42	455.37	84
MW-54-140	Deep Zone	455.01	455.15	456.49	455.58	84
MW-54-195	Deep Zone	455.22	455.40	456.65	455.79	84
MW-55-045	Middle Zone	455.47	455.66	456.54	455.91	84
MW-55-120	Deep Zone	455.46	455.65	456.45	455.87	84
PT2D	Deep Zone	452.72	452.96	454.27	453.33	89
PT5D	Deep Zone	453.25	453.50	454.85	453.88	89
PT6D	Deep Zone	453.29	453.55	454.89	453.92	89
RRB	River Station	454.55	454.80	456.59	455.33	90

NOTES:

Averages reported in ft amsl (feet above mean sea level).

Quarterly Average = average of daily averages over reporting period.

INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction.



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-20-130 data unavailable from January 1, 2015 through January 22, 2015 due to transducer malfunction.
4. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1A
MW-20 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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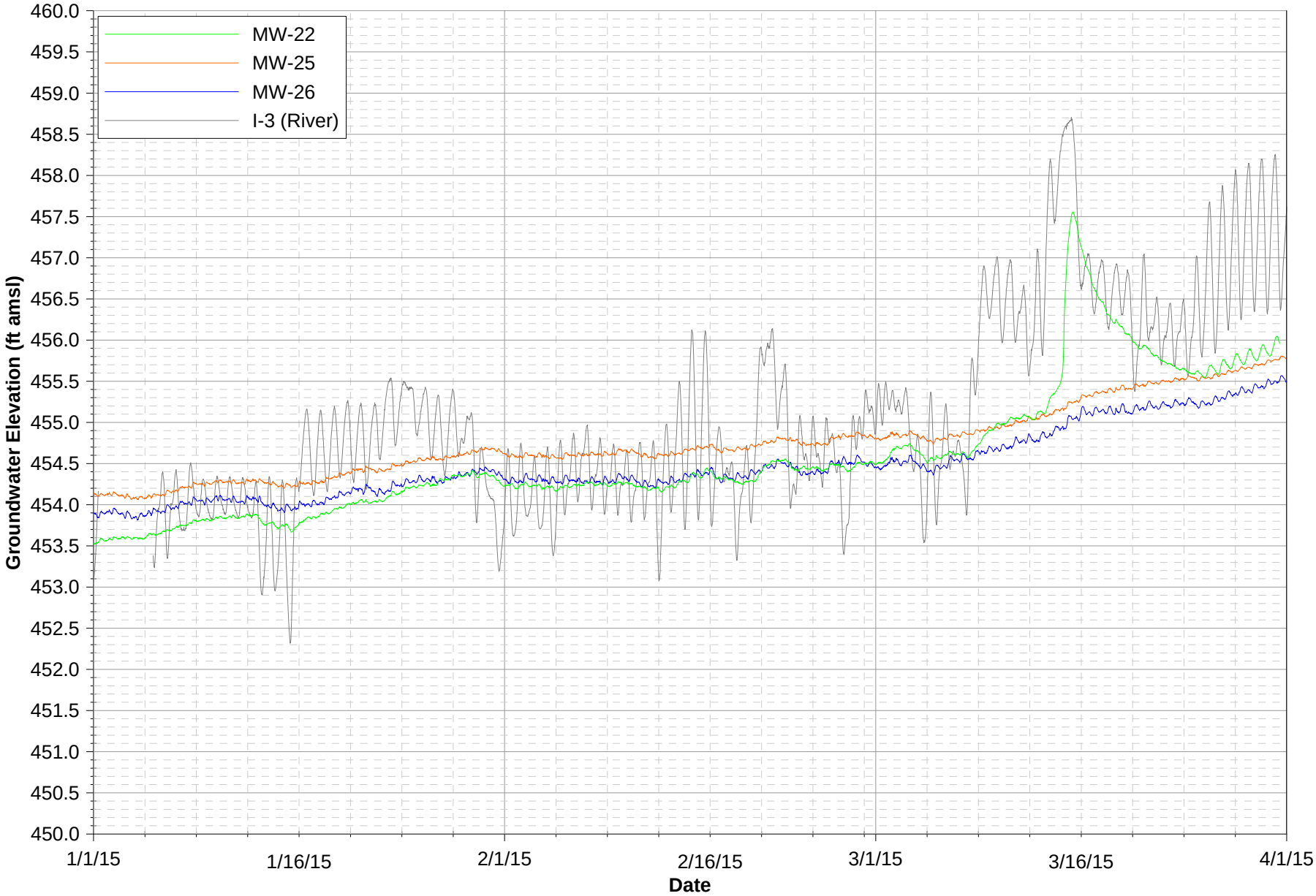
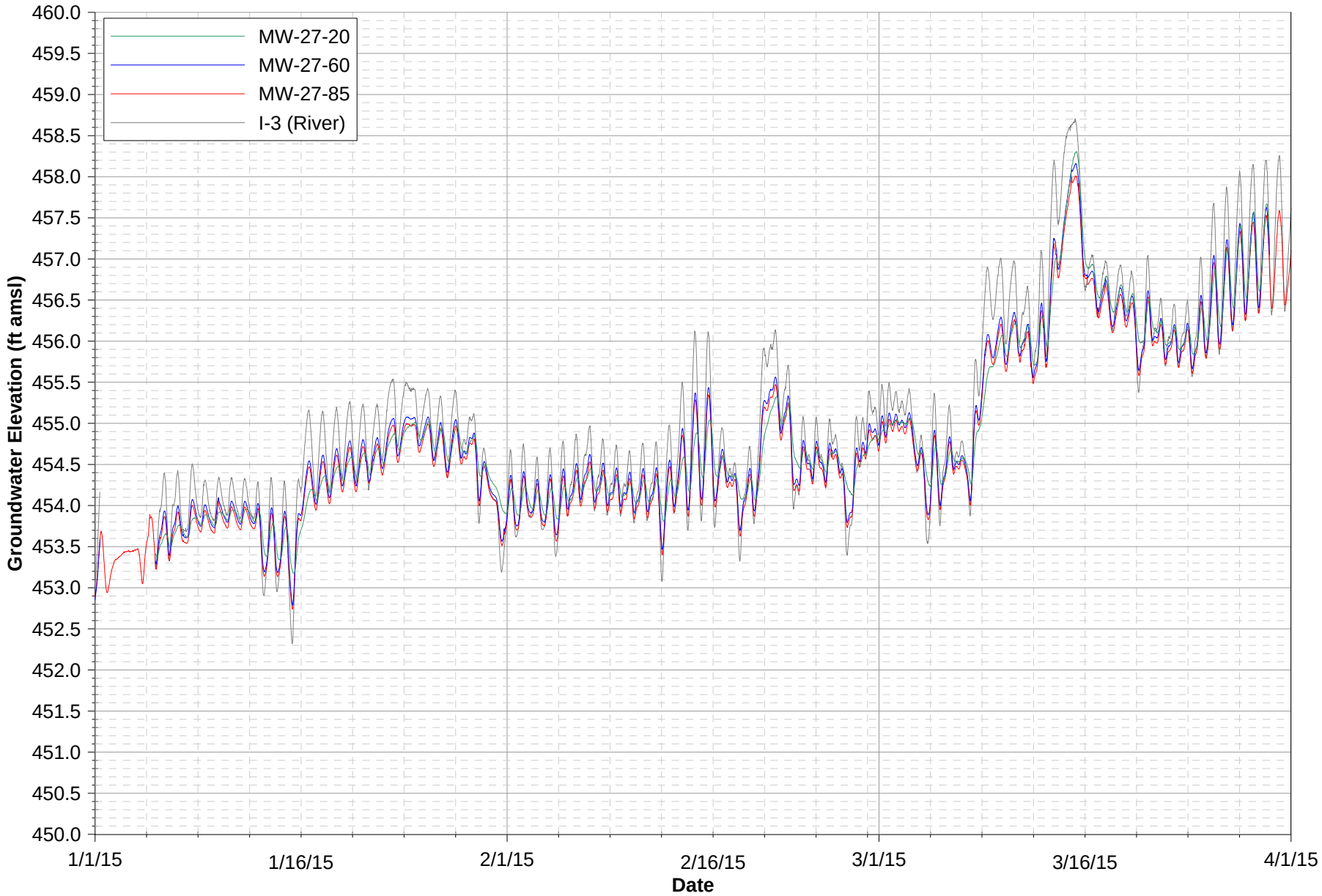


Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1B
MW-22, MW-25, AND MW-26 HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

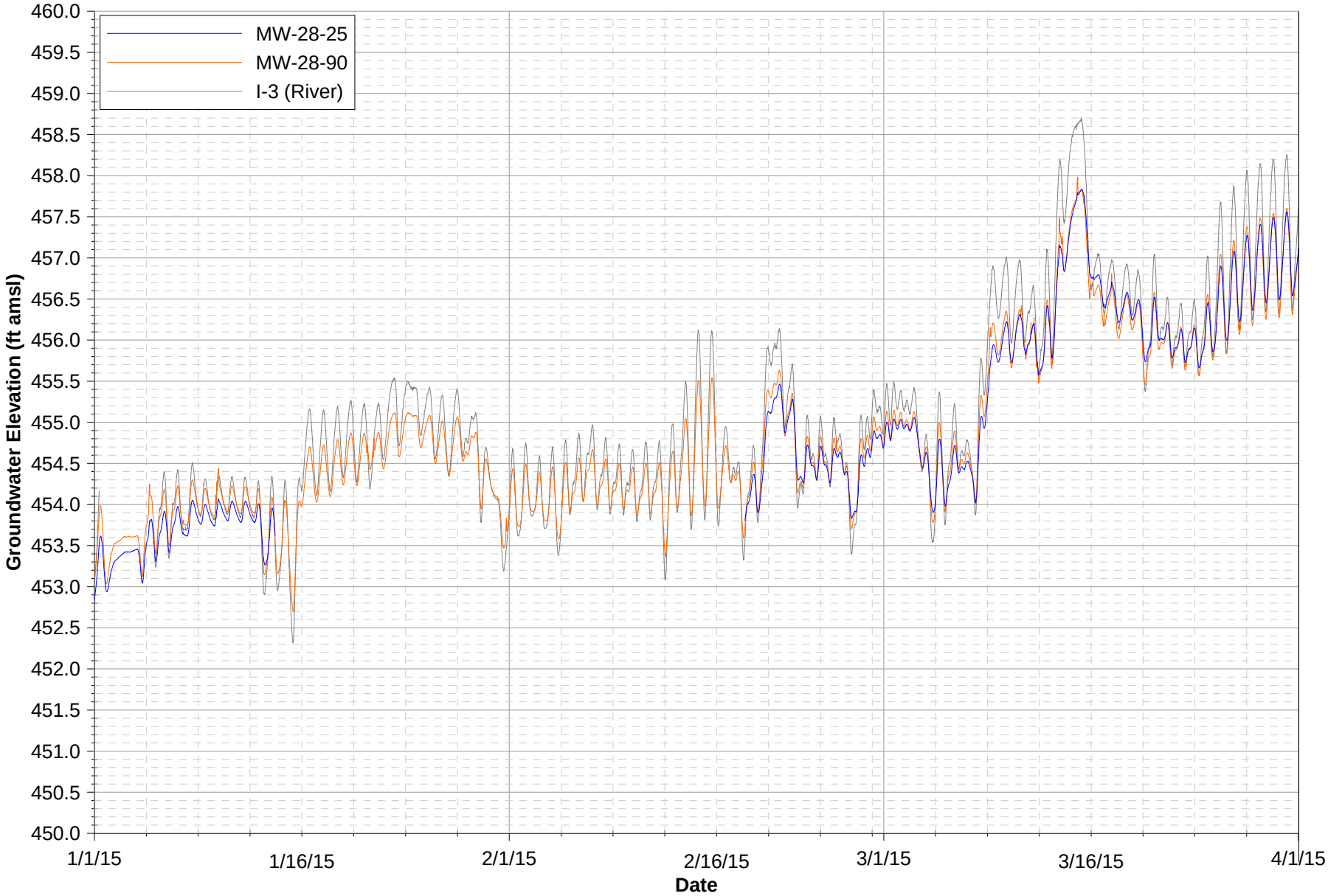
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
4. MW-27-20 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
5. MW-27-60 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1C
MW-27 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

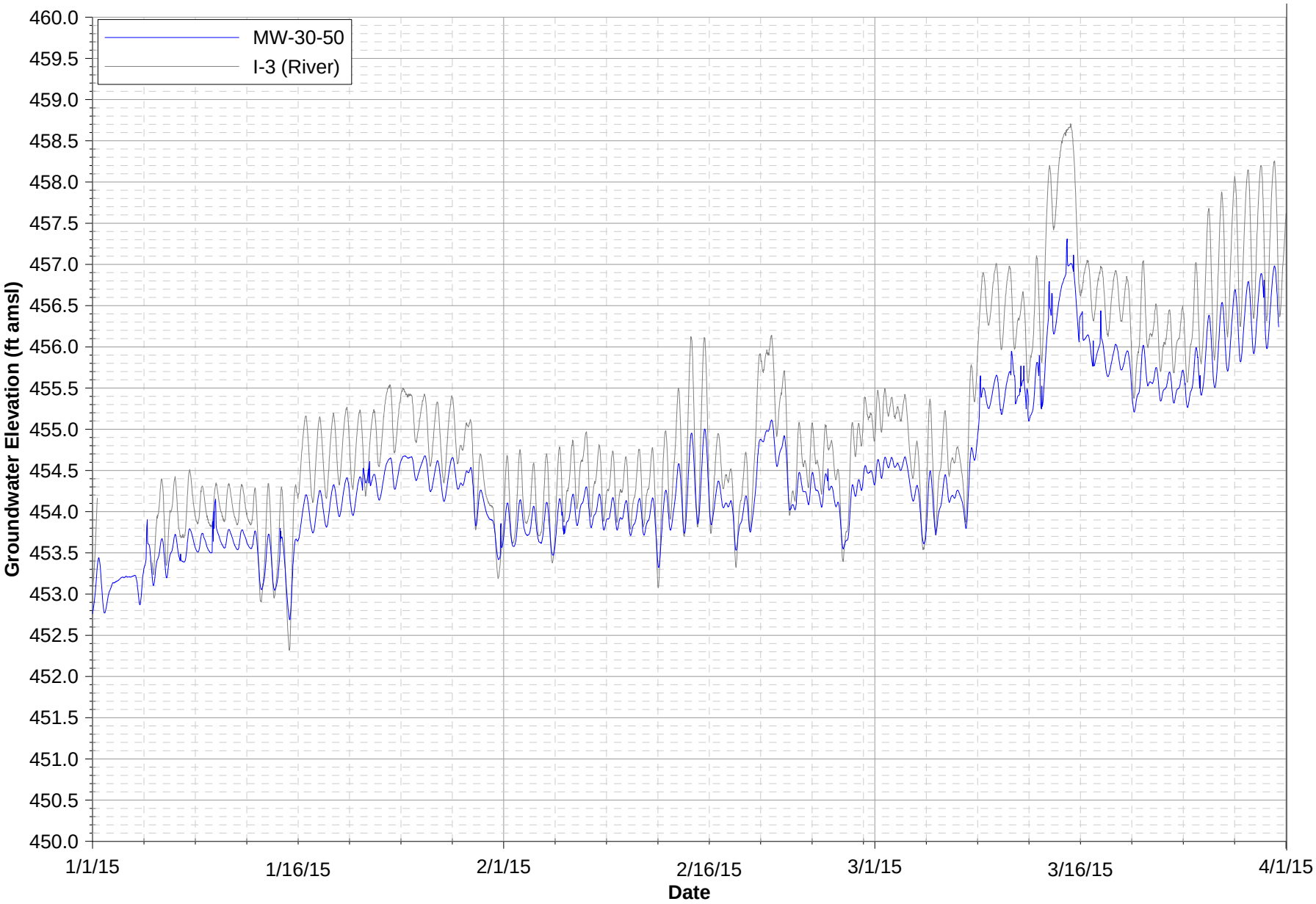
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
4. MW-28-25 data unavailable from January 14, 2015 through February 18, 2015 due to transducer malfunction.

FIGURE F-1D
MW-28 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

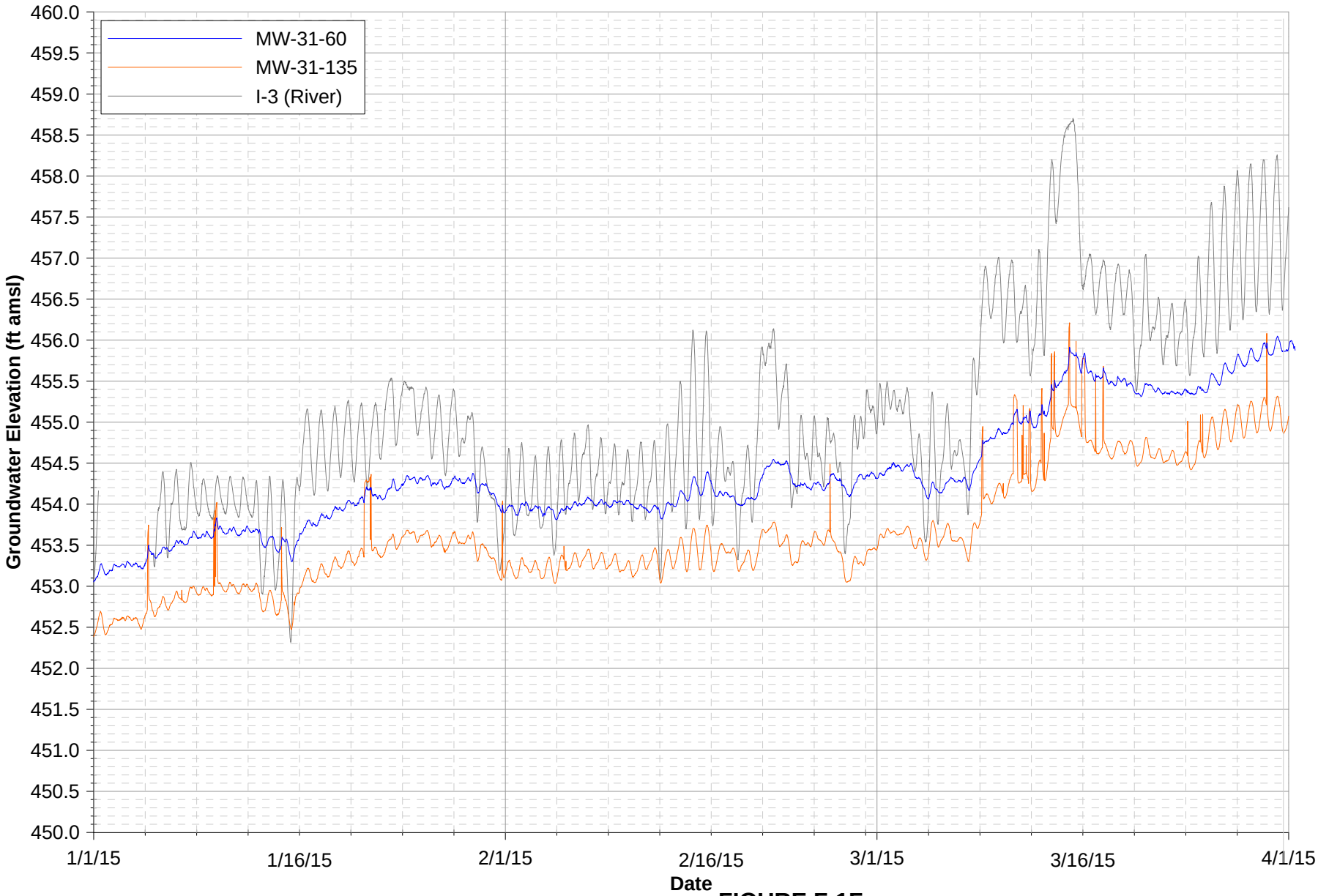
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1E
MW-30-50 HYDROGRAPH
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

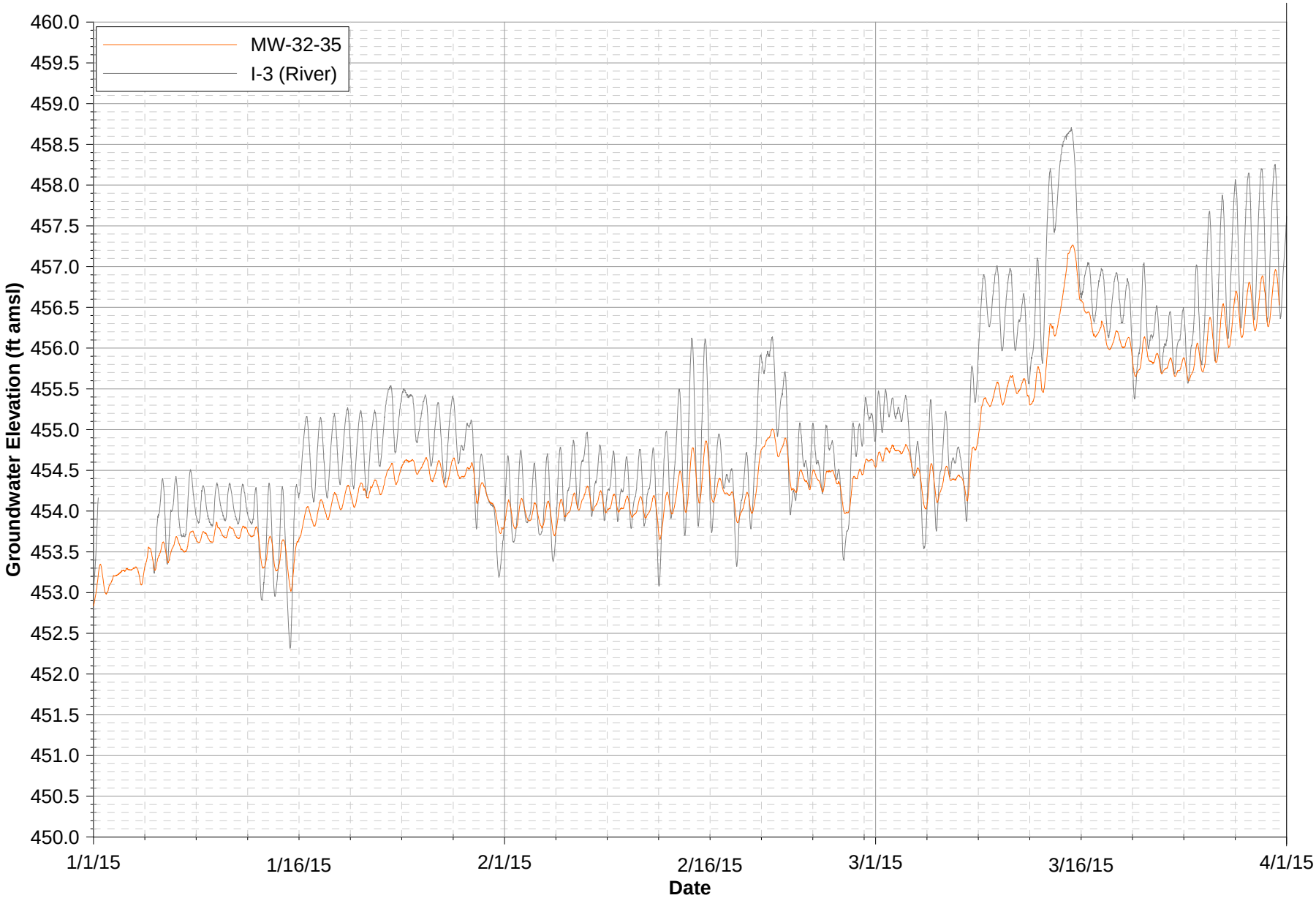
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1F
MW-31 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

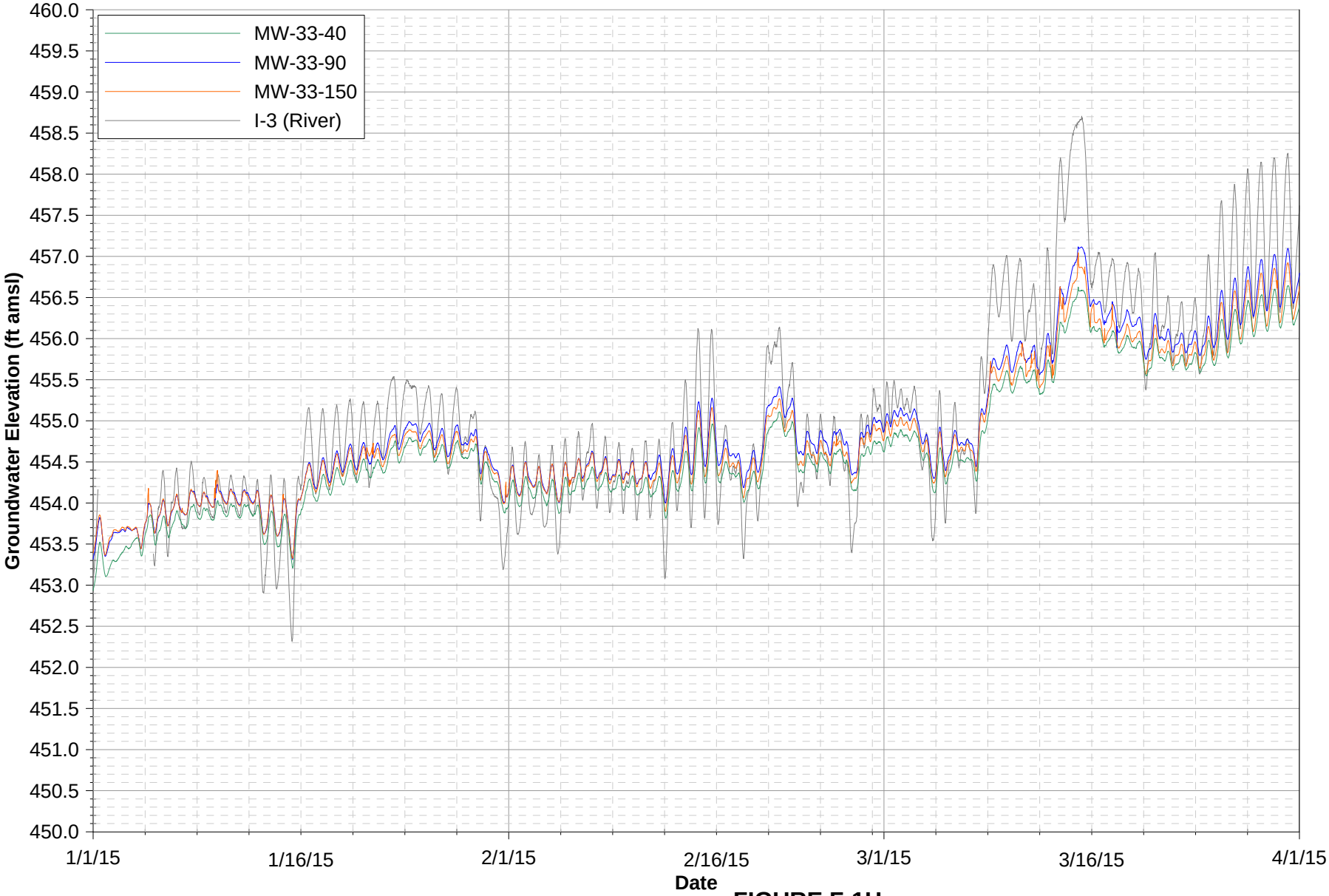
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1G
MW-32 HYDROGRAPH
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

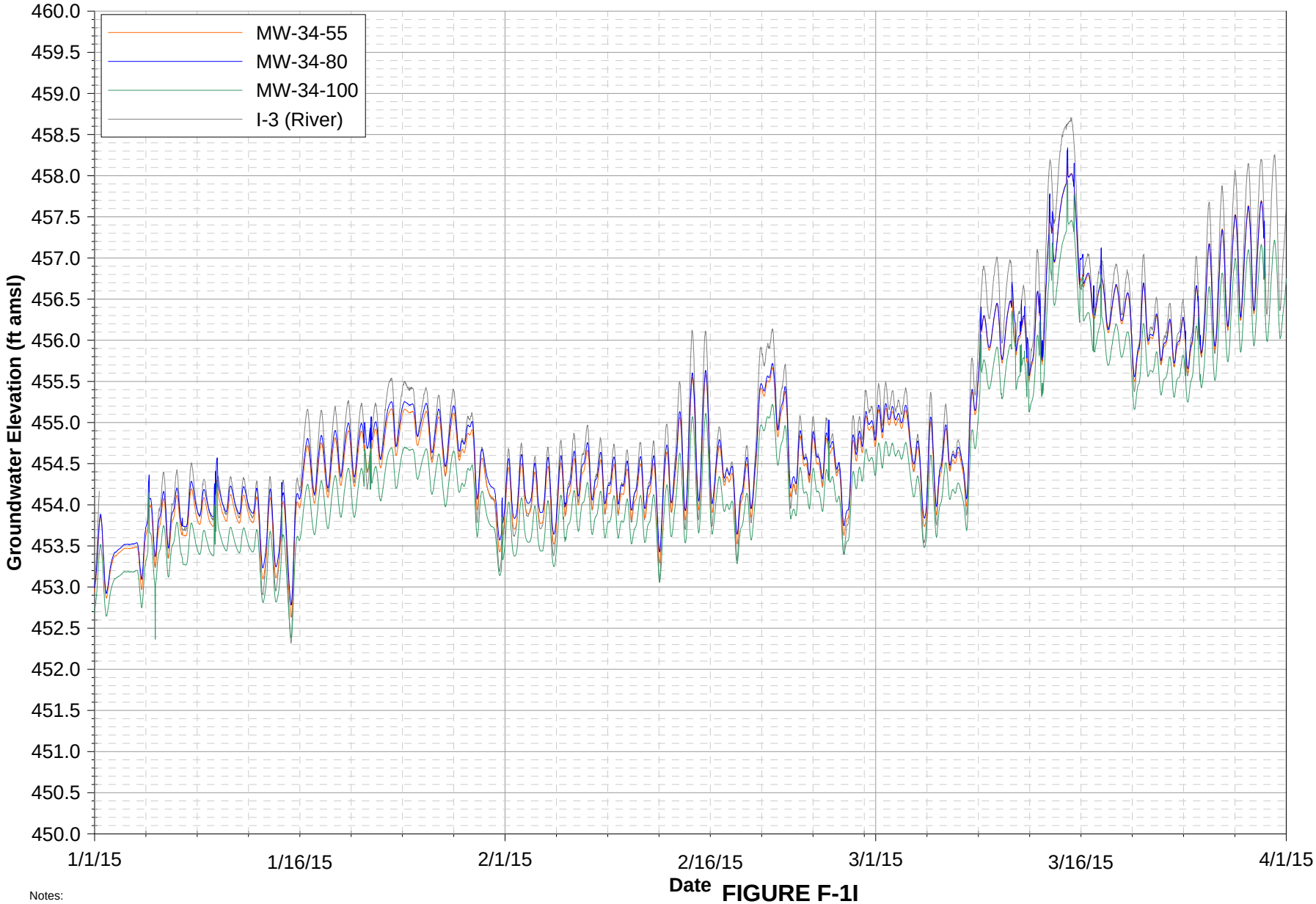
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1H
MW-33 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

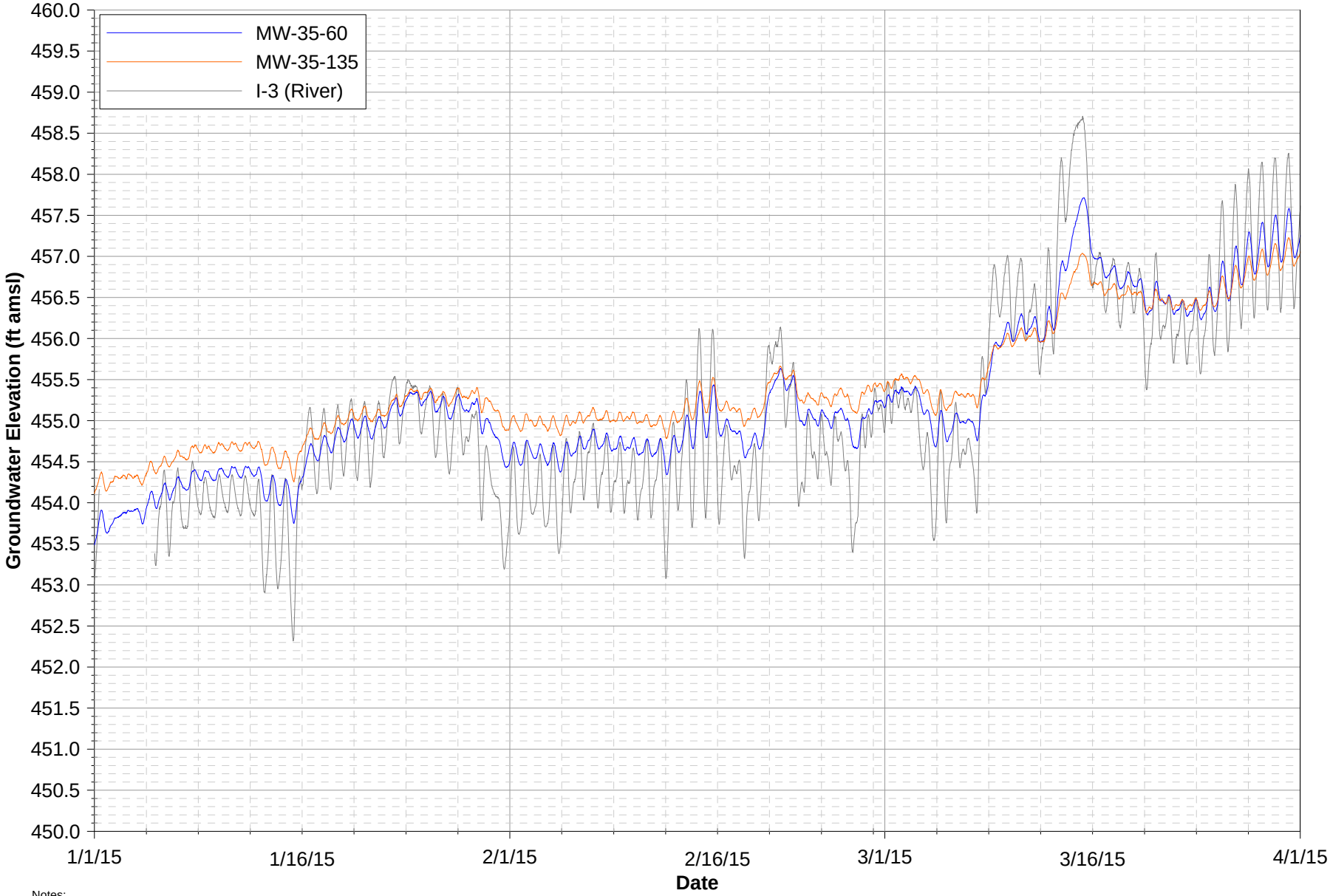
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1I
MW-34 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

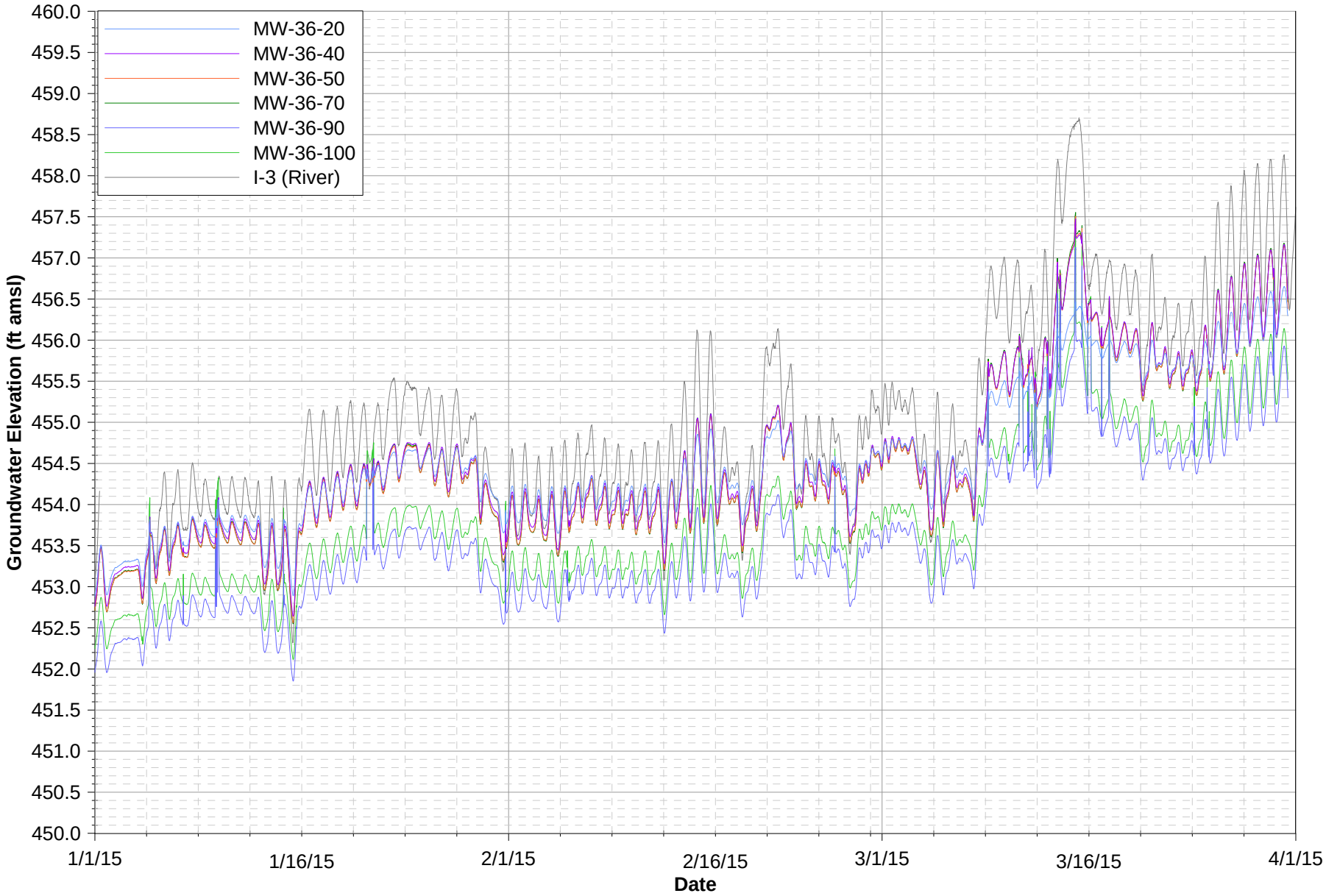
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1J
MW-35 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

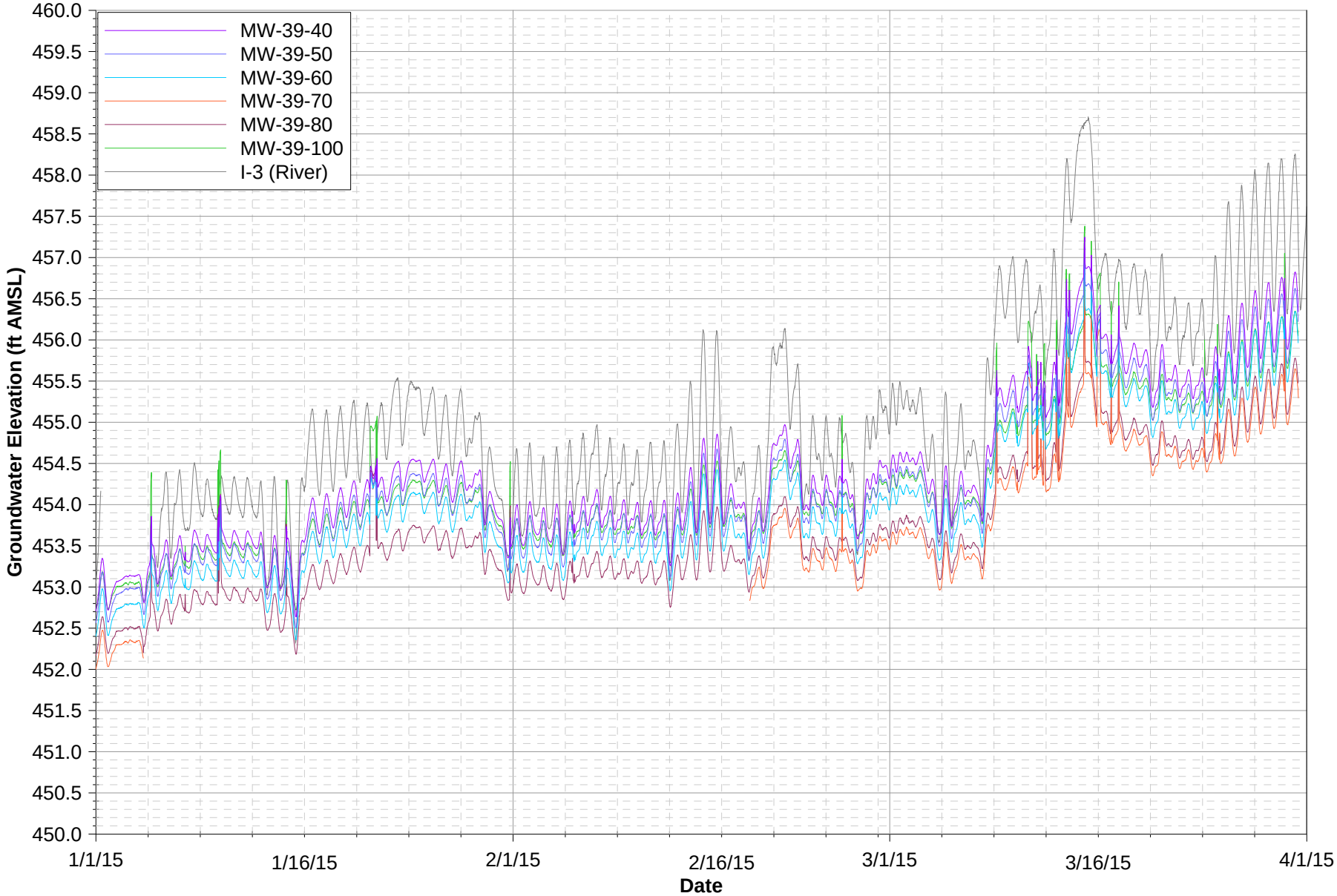


Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1K
MW-36 CLUSTER HYDROGRAPHS

FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

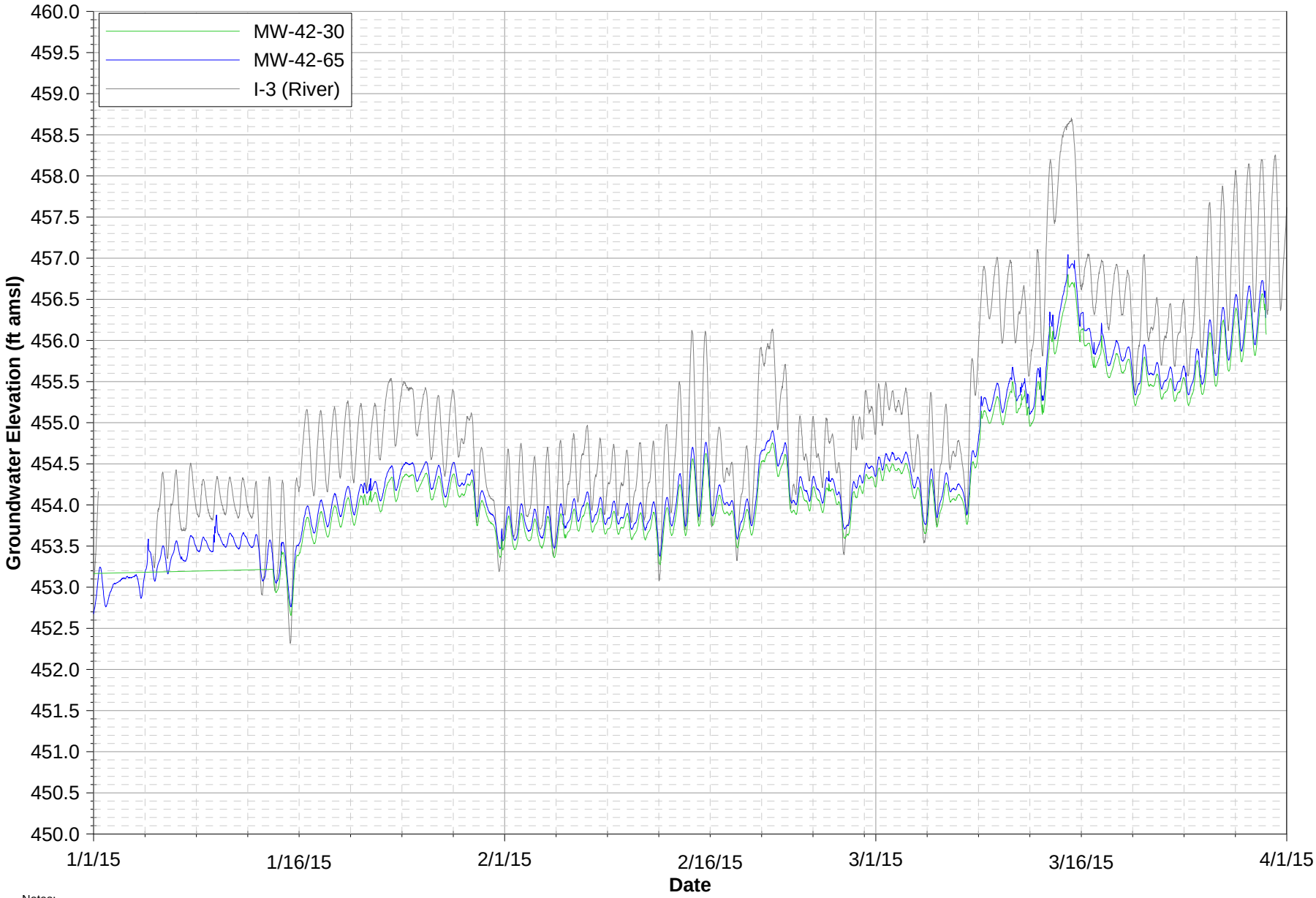
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
4. MW-39-70 data unavailable from January 4, 2015 through February 18, 2015 due to transducer malfunction.

FIGURE F-1L
MW-39 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

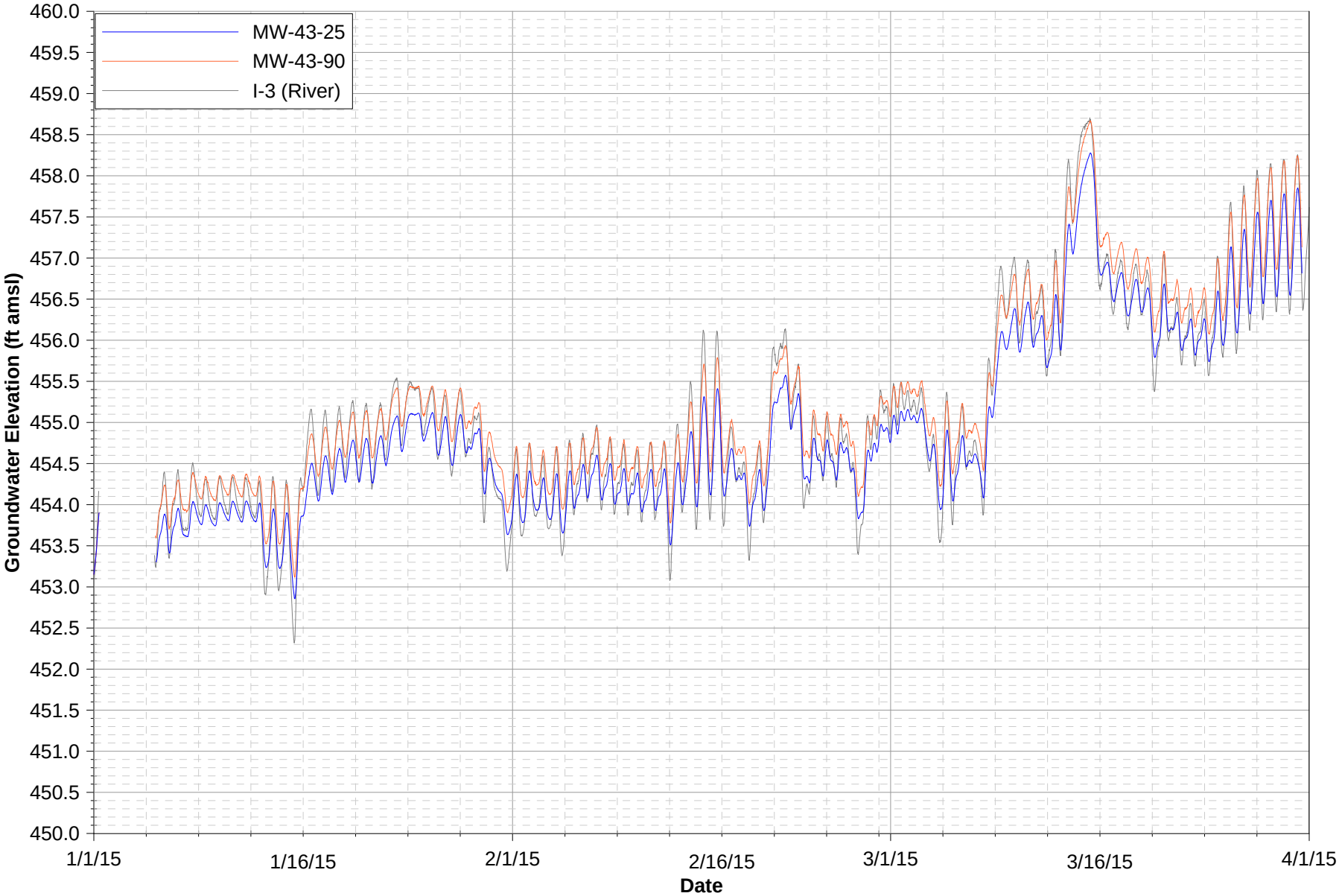
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1M
MW-42 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

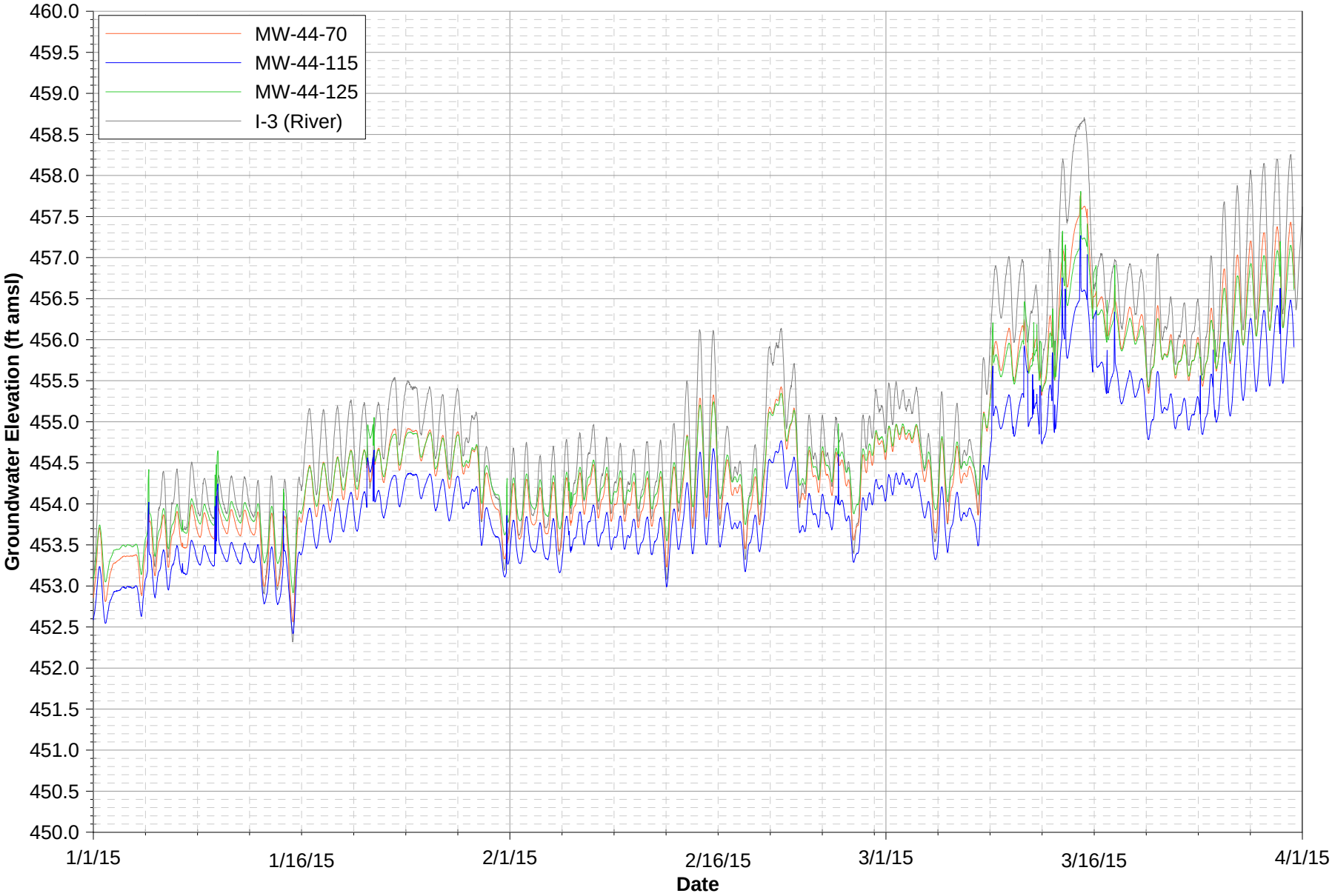
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
4. MW-43-25 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
5. MW-43-90 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1N
MW-43 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

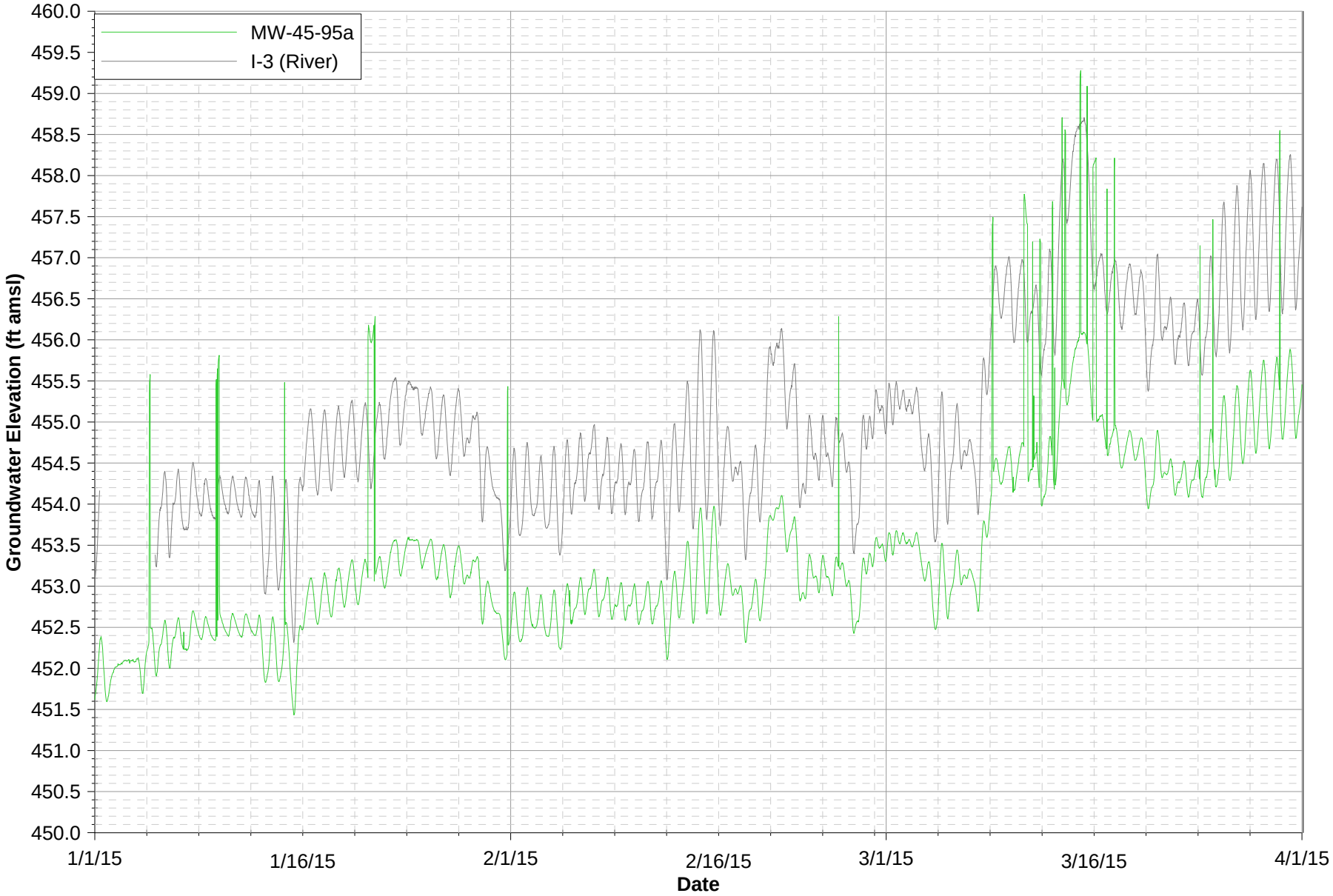
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1O
MW-44 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

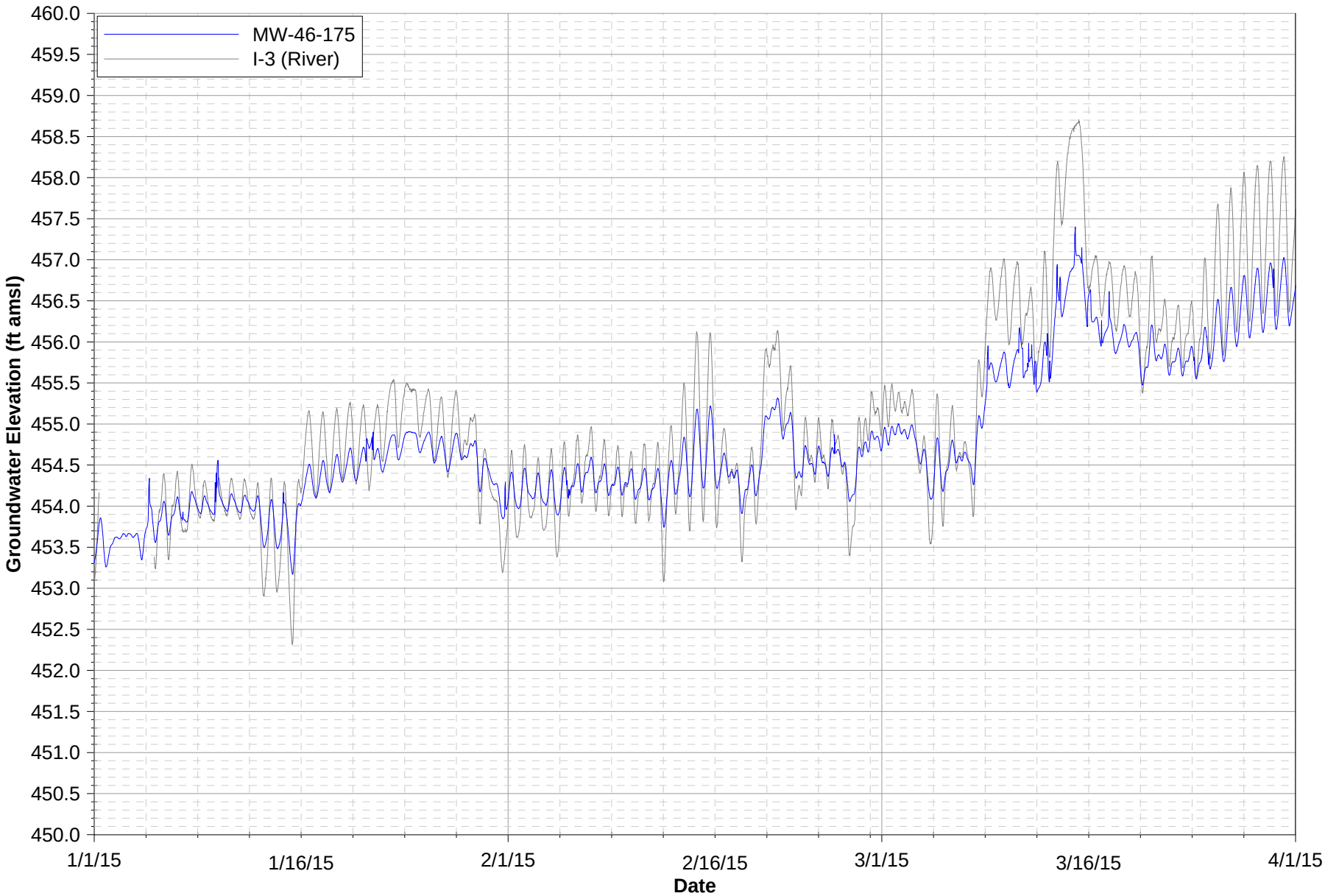
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1P
MW-45-95a HYDROGRAPH
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

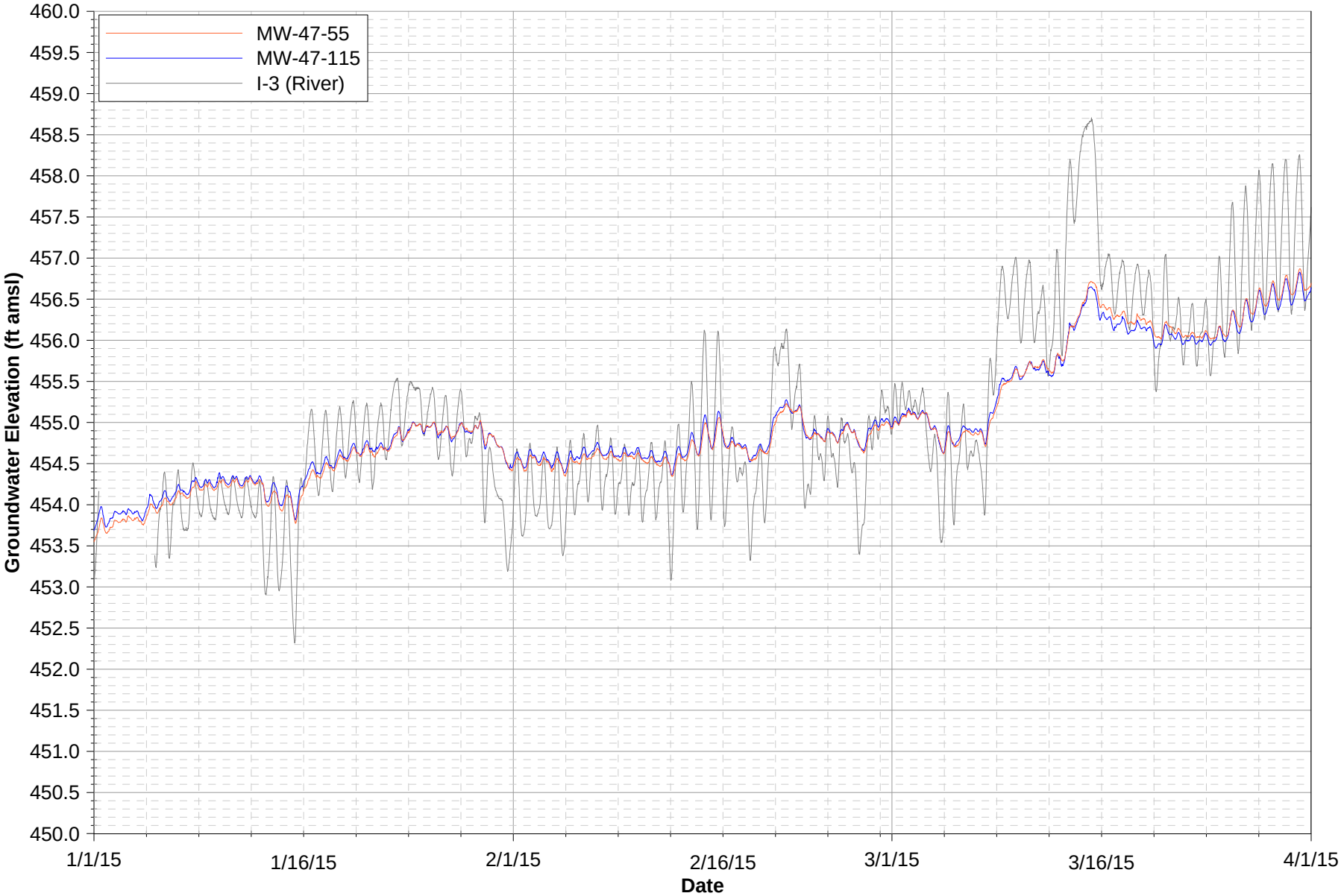
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1Q
MW-46 HYDROGRAPH
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

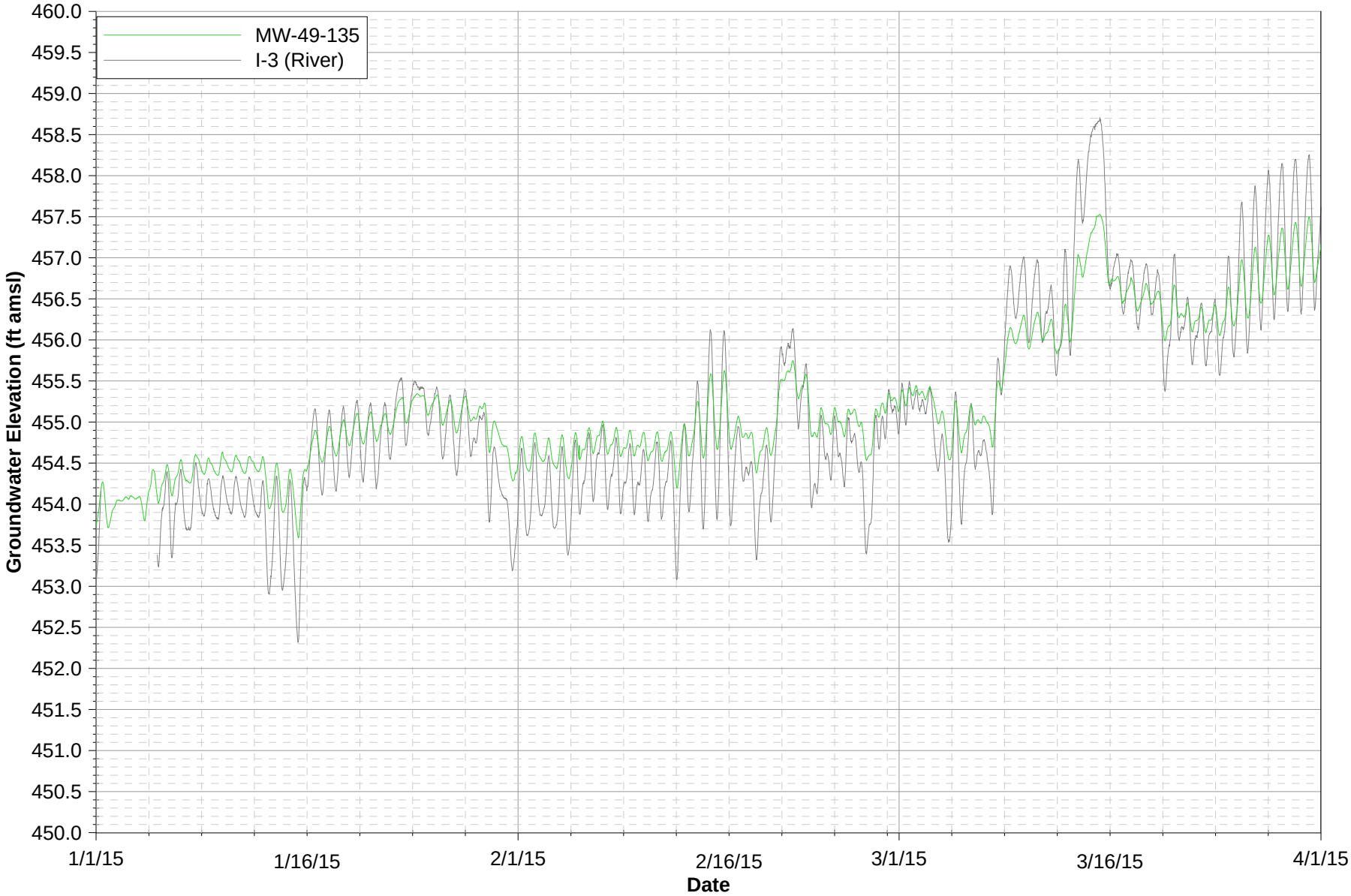
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1R
MW-47 CLUSTER HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

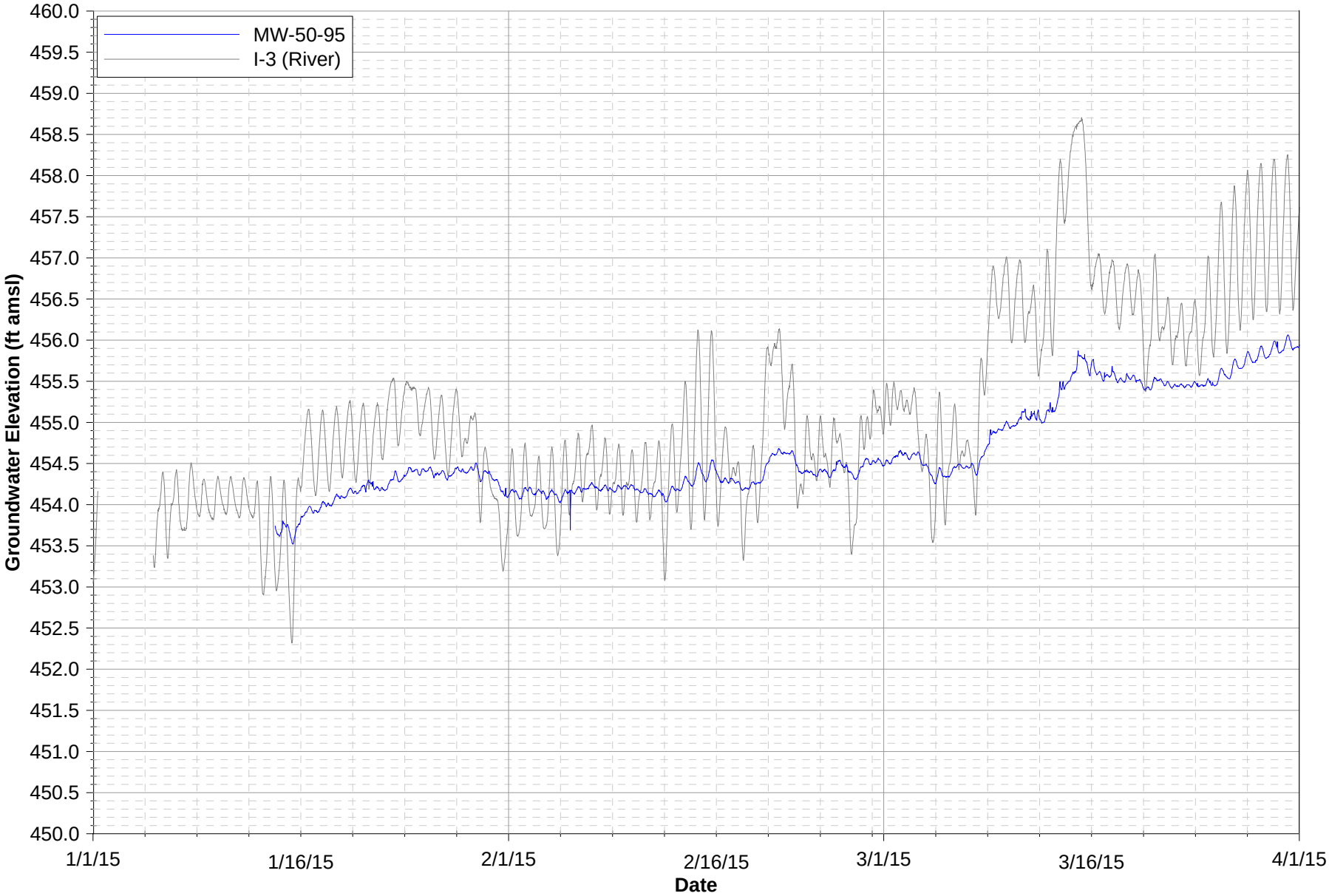
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1S
MW-49 HYDROGRAPH
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

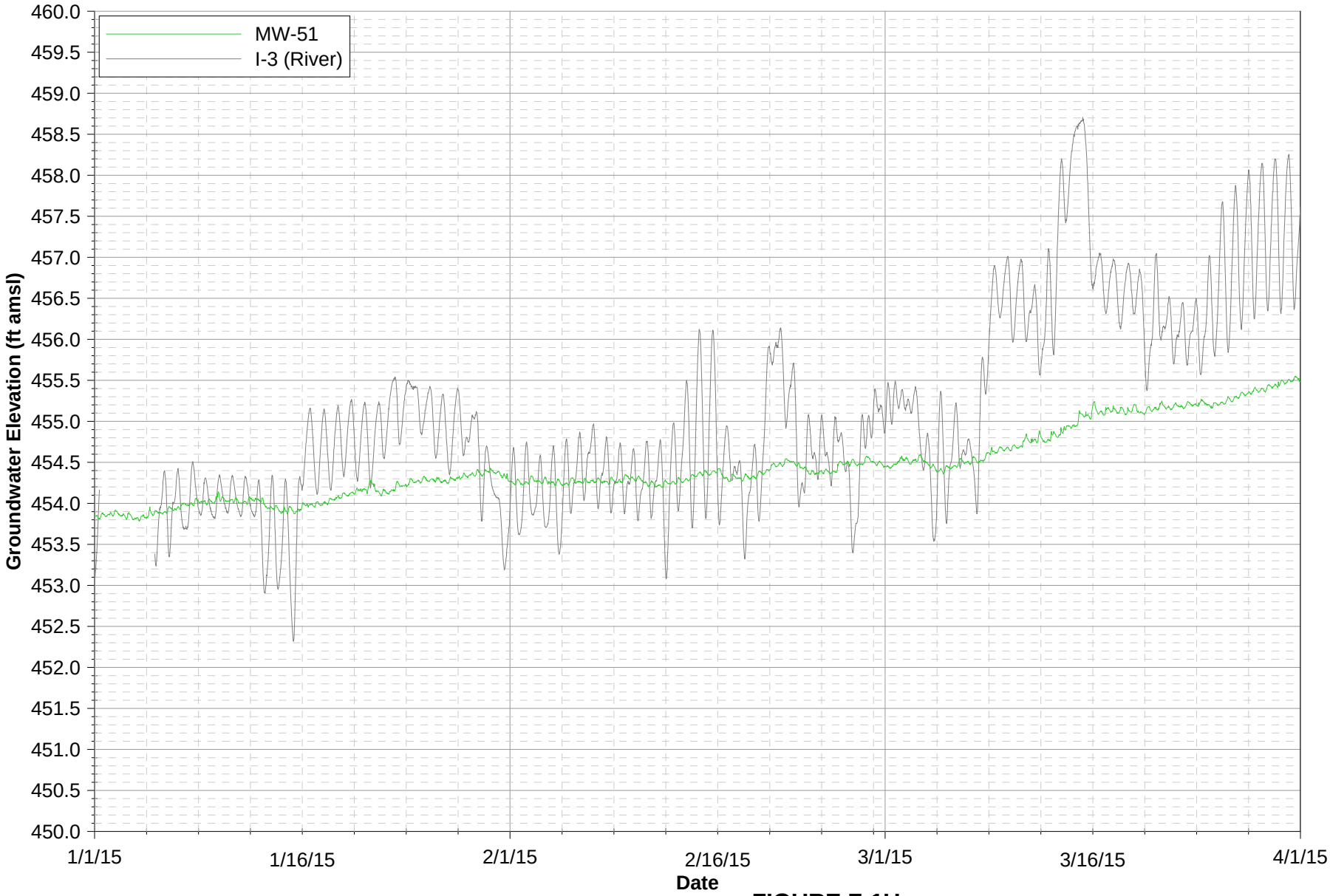
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1T
MW-50 HYDROGRAPH
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

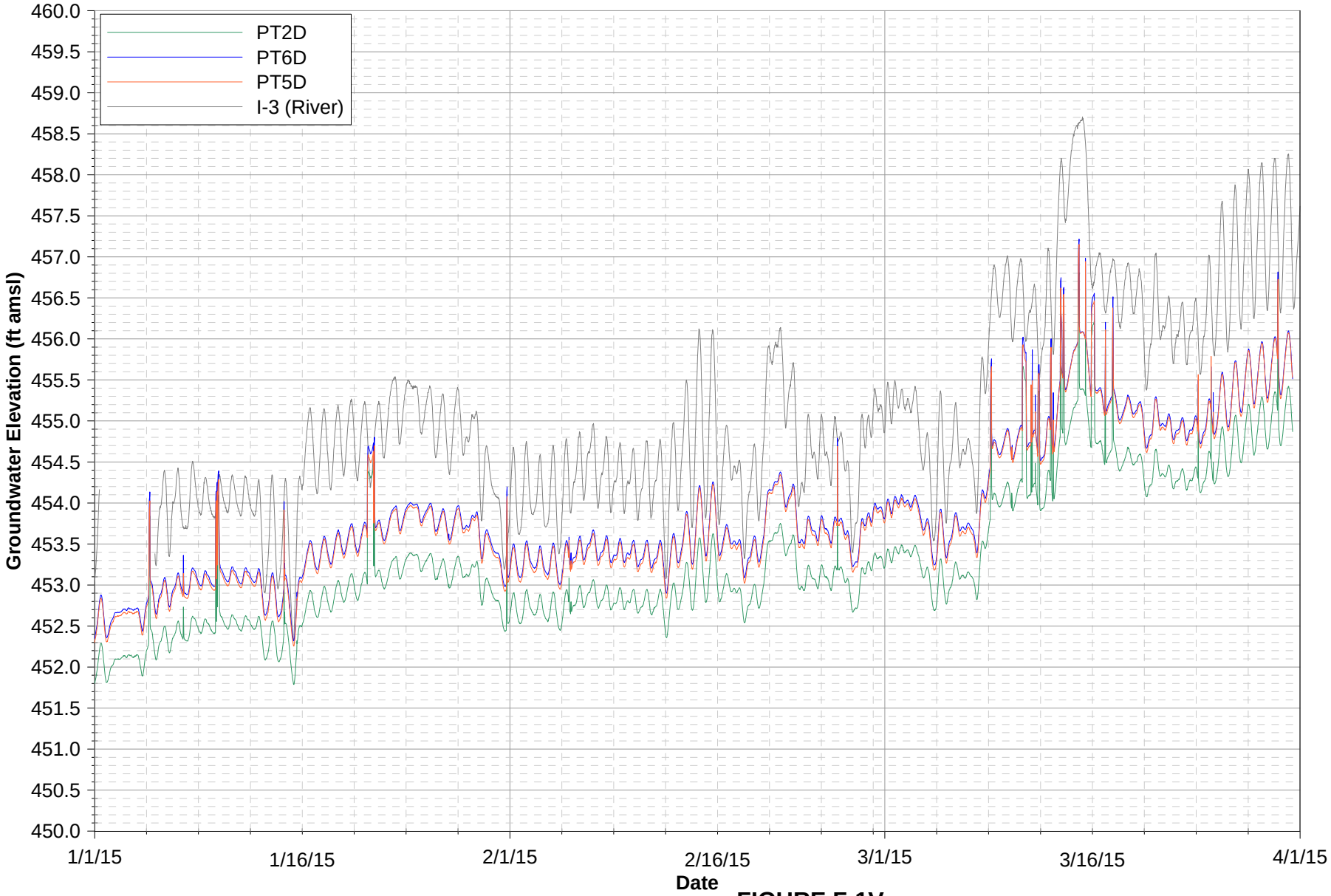
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1U
MW-26 AND MW-51 HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Note:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.

FIGURE F-1V
IN SITU PILOT STUDY WELL HYDROGRAPHS
FIRST QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL