Topock Project Executive Abstract

Document Title: *Second 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: August 14, 2015 Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E
Priority Status: ☐ **HIGH** ☐ **MED** ☒ **LOW** Is this time critical? ☐ Yes ☒ No Type of Document: ☐ Draft ☒ Report ☐ Letter ☐ Memo ☐ Other/Explain:	Action Required: ☒ Information Only ☐ Review & Comment Return to: _____ By Date: _____ ☐ Other/Explain:
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 Second Quarter 2015, which includes the months of April, May, and June 2015. The average pumping rate for the IM extraction system during the Second Quarter 2015 was 123.2 gallons per minute. To date, the IM extraction system has removed a total of 8,280 pounds (3,760 kilograms) of chromium.

Written by: PG&E

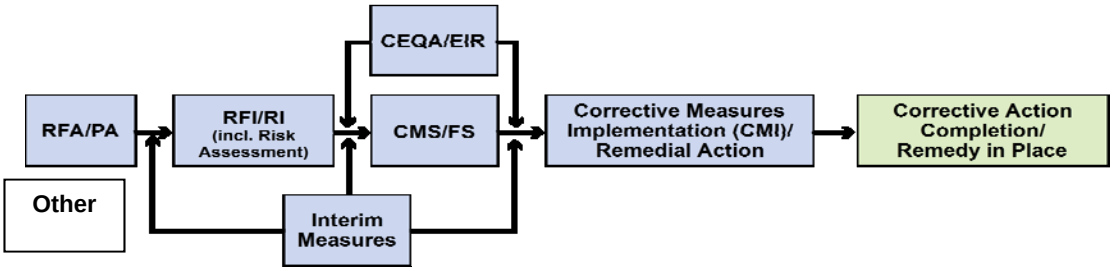
Recommendations:
This report is for information only.

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®

Yvonne J. Meeks
Manager

Environmental Remediation

Mailing Address
4325 South Higuera Street
San Luis Obispo, CA 93401

Location
6588 Ontario Road
San Luis Obispo, CA 93405

805.234.2257
Fax: 805.773.8281
E-Mail: yjm1@pge.com

August 14, 2015

Mr. Aaron Yue
Project Manager
California Environmental Protection Agency,
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Subject: *Second Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* (Document ID: PGE20150814A)

Dear Mr. Yue:

Enclosed is the *Second 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 Second Quarter 2015 (April through June 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 California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC's) GMP and RMP directive of April 2005, this report also presents groundwater and surface water monitoring activities, results, and analyses related to the GMP and RMP during Second Quarter 2015.

The IM quarterly performance monitoring report is submitted in conformance with the reporting requirements in the DTSC's IM directive dated February 14, 2005, and in the updates and modifications approved by DTSC in letters or e-mails 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
Second Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

cc: Chris Guerre/DTSC
Karen Baker/DTSC
Pam Innis/DOI
Susan Young/CA-SLC
Bruce Campbell/AZ-SLD

Final Report

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

PG&E Topock Compressor Station, Needles, California

Document ID: PGE20150814A

Prepared for

California Environmental Protection Agency, Department of Toxic Substances Control

On behalf of

Pacific Gas and Electric Company

August 14, 2015

CH2MHILL®

155 Grand Avenue Suite 800
Oakland, CA 94612

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

PG&E Topock Compressor Station, Needles, California

Prepared for

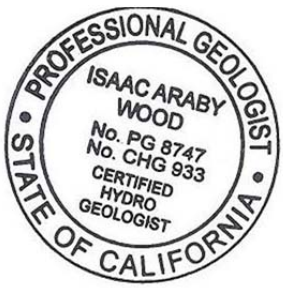
California Environmental Protection Agency, Department of Toxic Substances Control

On behalf of

Pacific Gas and Electric Company

August 14, 2015

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



Isaac Wood
Project Hydrogeologist, P.G., C.Hg

Jay Piper
CH2M HILL Project Manager

Contents

Section **Page**

Acronyms and Abbreviations vii

1 Introduction 2-1
1.1 Site-wide Groundwater and Surface Water Monitoring Program 2-1
1.1.1 Groundwater Monitoring Program and Surface Water Monitoring Program Monitoring Networks 2-2
1.2 Interim Measure Performance Monitoring Program 2-2
1.2.1 Performance Monitoring Program Monitoring Networks 2-3
1.3 Sustainability 2-3

2 Second Quarter 2015 Monitoring Activities 2-1
2.1 Groundwater Monitoring Program 2-1
2.1.1 Monthly 2-1
2.1.2 Quarterly 2-1
2.1.3 Well Maintenance 2-1
2.1.4 Well Sampling Method Trial at Well Clusters MW-38 and MW-40 2-1
2.2 Surface Water Monitoring Program 2-1
2.3 Performance Monitoring Program 2-2

3 Results for Site-wide Groundwater Monitoring and Surface Water Sampling 3-1
3.1 Groundwater Results for Hexavalent Chromium and Chromium 3-1
3.2 Other Groundwater Monitoring Results 3-1
3.2.1 Chemicals of Potential Concern, In Situ Byproducts, and Other Analytes 3-1
3.2.2 Arsenic Sampling in Monitoring Wells 3-1
3.3 Surface Water Sampling Results 3-1
3.4 Data Validation and Completeness 3-2

4 Interim Measure Performance Monitoring Program Evaluation 4-1
4.1 Water Quality Results for Performance Monitoring Program Floodplain Wells 4-1
4.2 Hexavalent Chromium Distribution and Trends in Performance Monitoring Program Wells 4-1
4.3 Performance Monitoring Program Contingency Plan Hexavalent Chromium Monitoring 4-2
4.4 Extraction Systems Operations 4-2
4.5 Hydraulic Gradient and River Levels during Quarterly Period 4-3
4.6 Projected River Levels during Next Quarter 4-3
4.7 Quarterly Performance Monitoring Program Evaluation Summary 4-4

5 Upcoming Operation and Monitoring Events 5-1
5.1 Groundwater Monitoring Program 5-1
5.1.1 Quarterly Monitoring 5-1
5.1.2 Monthly Monitoring 5-1
5.1.3 Well Inspections 5-1
5.2 Surface Water Monitoring Program 5-1
5.3 Performance Monitoring Program 5-1
5.3.1 Extraction 5-1
5.3.2 Transducer Download 5-1

6 References 6-1

Tables

1-1 Topock Monitoring Reporting Schedule
3-1 Groundwater Sampling Results, April 2014 through June 2015
3-2 Groundwater COPCs and In Situ Byproducts Sampling Results, Second Quarter 2015
3-3 Surface Water Sampling Results, Second Quarter 2015
3-4 COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, Second Quarter 2015
4-1 Pumping Rate and Extracted Volume for IM System, Second Quarter 2015
4-2 Analytical Results for Extraction Wells, April 2014 through June 2015
4-3 Average Hydraulic Gradients Measured at Well Pairs, Second Quarter 2015
4-4 Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3

Figures

1-1 Locations of IM-3 Facilities and Monitoring Locations
1-2 Monitoring Locations and Sampling Frequency for GMP
1-3 Monitoring Locations and Sampling Frequency for RMP
1-4 Locations of Wells and Cross Sections Used for IM Performance Monitoring
3-1a Cr(VI) Sampling Results, Shallow Wells in Alluvial Aquifer and Bedrock, Second Quarter 2015
3-1b Cr(VI) Sampling Results, Mid-Depth Wells in Alluvial Aquifer and Bedrock, Second Quarter 2015
3-1c Cr(VI) Sampling Results, Deep Wells in Alluvial Aquifer and Bedrock, Second Quarter 2015
4-1 Maximum Cr(VI) Concentrations in Alluvial Aquifer and Bedrock, Second Quarter 2015
4-2 Cr(VI) Concentrations, Floodplain Cross-section B, Second Quarter 2015
4-3 Cr(VI) Concentration Trends in Selected Performance Monitoring Wells, April 2005 through June 2015
4-4a Average Groundwater Elevations in Shallow Wells and River Elevations, Second Quarter 2015
4-4b Average Groundwater Elevations in Mid-depth Wells, Second Quarter 2015
4-4c Average Groundwater Elevations in Deep Wells, Second Quarter 2015
4-5 Average Groundwater Elevations for Wells in Floodplain Cross-section A, Second Quarter 2015
4-6 Measured Hydraulic Gradients, River Elevations, and Pumping Rate, Second Quarter 2015
4-7 Past and Predicted Future River Levels at Topock Compressor Station

Appendices

A Well Inspection and Maintenance Log, Second Quarter 2015
B Lab Reports, Second Quarter 2015 (Provided on CD-ROM only with hard copy submittal)
C Arsenic Monitoring Results
D Groundwater Monitoring Data for GMP and Interim Measures Monitoring Wells
E Interim Measures Extraction System Operations Log, Second Quarter 2015
F Hydraulic Data for Interim Measures Reporting Period

Acronyms and Abbreviations

µg/L	micrograms per liter
ADEQ	Arizona Department of Environmental Quality
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
mg/L	milligrams per liter
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

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 April 1, 2015 through June 30, 2015 (hereafter referred to as the reporting period, or Second 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. On June 29, 2015, the Arizona Department of Environmental Quality (ADEQ) recommended that PG&E increase the sampling frequency of MW-55-120 from semiannually to quarterly (ADEQ, 2015). 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 (June2014). 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 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 13, 2015 (CH2M HILL, 2015a).

In compliance with the requirements for the GMP and RMP directive of April 2005 (DTSC, 2005a), this document presents the Second Quarter 2015 GMP and RMP report for the monitoring activities from April 1, 2015 through June 30, 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 Third Quarter 2014, following the DTSC direction given on June 27, 2014 (DTSC, 2014), and will be revised again in Third Quarter 2015, following ADEQs recommendation given on June 29, 2015 (ADEQ, 2015). Figure 1-2 shows the current sampling frequencies, with the sampling purge method indicated by the font of the well identification labels. These changes include sampling all Arizona monitoring well locations at semi-annual frequency following DTSC's direction, except MW-55-120, which will be sampled quarterly per ADEQ's recommendation. Sampling frequencies for the Arizona monitoring wells were previously updated following the April 23, 2010 approval from the ADEQ (ADEQ, 2010) and the April 28, 2010 directive from DTSC (DTSC, 2010b). 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, 2015a).

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 Second Quarter 2015 PMP evaluation report for the IM monitoring activities from April 1, 2015 through June 30, 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

Second 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 April, May, and June 2015, and was analyzed for Cr(VI), chromium, total dissolved solids (TDS), and pH.

2.1.2 Quarterly

The Second Quarter 2015 GMP quarterly groundwater monitoring event was conducted from April 20, 2015 through May 27, 2015. 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 Second Quarter 2015, sampling event groundwater samples collected at GMP wells were submitted for laboratory analysis of Cr(VI) and other constituents, including the following:

- 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, 2010c, 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 (CH2M HILL, 2009c).
- 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 minimal drawdown 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

Quarterly surface water sampling was conducted on June 10 and 11, 2015 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 (April, May, and June). 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

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, laboratory-specific conductance, field oxidation-reduction potential, field pH, and field turbidity in groundwater samples collected during the Second Quarter 2015.The maximum detected Cr(VI) concentration was 12,000 µg/L at well MW-68-180. The laboratory reports from Second Quarter 2015 sampling are presented in Appendix B.

Figures 3-1a and 3-1c present the Cr(VI) results for wells monitoring the shallow (upper-depth interval), mid-depth (middle depth interval), and deep (lower-depth interval) wells, respectively, of the Alluvial Aquifer and bedrock from Second Quarter 2015. Figures 3-1a through 3-1c 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 Second Quarter 2015. 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 2015a,b).

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 Second Quarter 2015. The wells where maximum concentrations of these analytes were reported are summarized as follows:

- MW-33-40 with a molybdenum concentration of 130 µg/L
- MW-67-185 with a nitrate concentration of 54.0 milligrams per liter (mg/L)
- MW-67-185 with a selenium concentration of 300 µg/L
- MW-71-35 with a manganese concentration of 3,900 µg/L
- MW-42-55 with an arsenic concentration of 21.0 µg/L

3.2.2 Arsenic Sampling in Monitoring Wells

Select Alluvial Aquifer and bedrock wells were sampled for arsenic in the Second 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 150 µg/L), molybdenum (less than 5.5 µg/L), nitrate/nitrite as nitrogen (less than 1.0 mg/L), 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 and Red Rock Bridge (RRB), where values of 51.0 and 8.5 µg/L were reported, respectively. Dissolved iron results were below laboratory reporting limits, except from the sample collected from C-MAR. 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 and iron concentrations are typical of reduced geochemical environments. The RRB location is also located off the main river channel in a small embayment that is partially or completely cut off from the river during low water and where reducing conditions likely exist in nearby shallow groundwater.

3.4 Data Validation and Completeness

Laboratory analytical data from the Second 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:

- Thirty 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.
- Seven samples had Cr(VI) (USEPA Method 218.6) concentrations that exceeded the dissolved chromium (Method USEPA 6020) concentration by a relative percent difference (RPD) of 20 percent or more. Two of the locations had field duplicate pairs. The lab performed additional analysis that confirmed the initial Cr(VI) results, so the initial results Cr(VI) were reported. The sample results were qualified as estimated and flagged “J”. As explained in table footnotes, a “J” flag indicates that the concentration as reported is considered to be an estimate.
- Ten Nitrate/Nitrite as N (Method SM4500-NO3) samples were associated with calibration blanks that had detections above the reporting limit. The sample results less than five times the concentration of the calibration blank were qualified as “not detected at the reported concentration”, and flagged “U” (nondetect).
- Four samples were associated with matrix spike recoveries that were outside the control limits for dissolved manganese (Method USEPA 6020). The associated nondetect sample results were qualified as estimated and flagged “J”.
- One field duplicate pair had an RPD greater than the upper control limit (20 percent) for hexavalent chromium (Method USEPA 218.6). The results were qualified as estimated and flagged “J” (note: the sample results were 1.2 and 1.5 µg/L).
- Two Alkalinity samples (Method SM2320B) were associated with an expired standard. The laboratory reanalyzed the samples outside holding with new standards, and the sample results were within acceptable discrepancy of the original results. The original results were reported, and the results were 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 pH results for the Second Quarter sampling events analyzed in a certified lab were qualified as estimated and flagged “J”.

The only other noteworthy issues identified in the Second Quarter 2015 data were associated with the June 2015 Surface Water sampling data. One issue was low level hexavalent chromium detection in both ambient blanks and some of the equipment blanks. Because the sample results were all nondetect, no flags were

applied. The second issue was an initial low level detection of chromium at C-NR1-D (1.2 µg/L). Because the hexavalent chromium results from the same sample did not collaborate, the lab redigested and reanalyzed the sample from the original container and from the hexavalent chromium container; both analyses were nondetect. The lab then digested and analyzed in triplicate (from the original chromium container), and all results were nondetect. The lab reported the result as nondetect. Additional details are provided in the data validation reports, which are kept in the project file and are available upon request.

SECTION 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 13, 2015 (CH2M HILL, 2015a). Figure 1-4 shows the locations of the monitoring wells sampled for the performance monitoring parameters.

4.2 Hexavalent Chromium Distribution and Trends in Performance Monitoring Program Wells

The Second Quarter 2015 distribution of Cr(VI) in the upper (shallow wells), middle (mid-depth 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 Second 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 Cr(VI) concentration contours shown for the Alluvial Aquifer on these figures are based on results for groundwater samples collected in Second Quarter 2015.

Figure 4-3 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through June 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. 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 June 2015.

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 reporting limits (for chromium, a typical reporting limit is 0.2 to 1.0 µg/L) remained at these low levels during Second 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 2006, respectively.

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

- Concentrations at the MW-20 cluster (located near the TW-3D pumping well) indicate generally stable to decreasing Cr(VI) concentrations at the shallow well MW-20-070 (since 2010), decreasing concentrations at MW-20-100 (since May 2007), and variable concentrations at MW-20-130 (Appendix D, Figure D-3).

[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.

- As presented in Appendix D, Figure D-5, Cr(VI) results for mid-depth well MW-33-90 have been fairly stable since monitoring began (2004), with a decreasing trend developing in 2013. MW-33-210 and MW-33-150 Cr(VI) concentrations have shown stable trends since 2007, with the exception of the recent MW-33-150 Cr(VI) concentration results from samples collected using minimal drawdown purging.
- As shown on Figure 4-3 and on Figure D-6 in Appendix D, Cr(VI) results for MW-34-100 generally declined from June 2006 through 2010. Since 2011, concentrations have fluctuated showing a consistent seasonally affected trend. The secondary seasonal effect in concentration is related to high (spring/summer) and low (winter) Colorado River levels.
- Cr(VI) results for MW-44-115 and MW-44-125 have shown declining trends since these wells were first sampled in 2006, as shown on Figure 4-3 and on Figure D-10 in Appendix D. The April 2015 Cr(VI) results for MW-44-115 were the lowest reported to date.
- Superimposed on a longer-term decreasing trend for Cr(VI), a secondary trend of seasonal fluctuation in Cr(VI) is also seen in monitoring well MW-46-175 (similar to MW-34-100) (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 Second 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 April 1 through June 30, 2015 are presented in Table 4-1. From April 1, 2015 through June 30, 2015, the volume of groundwater extracted and treated by the IM-3 system was 16,152,830 gallons. This resulted in the removal of an estimated 73.9 pounds (33.5 kilograms) of chromium from the aquifer during the period from March 1, 2015 through May 31, 2015.[2] Through May 2015, the IMs have removed approximately 8,280 pounds of chromium from the floodplain at the Topock site.

During Second Quarter 2015, extraction wells TW-3D and PE-1 operated at a combined pumping rate of 123.0 gallons per minute (gpm), including periods of planned and unplanned downtime. The average monthly pumping rates during the reporting period were 117.0 (April), 119.7 (May), and 133.2 (June). Extraction well TW-2S was not operated during Second Quarter 2015. Extraction well TW-2D ran for a short period of time on May 3, 2015. The operational runtime percentage for the IM extraction system was 91.1 percent during this reporting period. The operations log for the extraction system during Second 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. Five containers (roll-off bins) of solids from the IM-3 facility were disposed of at the U.S. Ecology Chemical Waste Management facility in Beatty, Nevada, during Second Quarter 2015. Daily IM-3 inspections included

[2] Chromium removed this reporting period includes the period of March 1 through May 31, 2015. On July 23, 2010, DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from March 1, 2015 through May 31, 2015.

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 730 µg/L in April to a minimum value of 700 µg/L in May and June, 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 2.9 to 3.6 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 Second 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 Second 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 Second 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 0.0054 to 0.0061 feet per foot (ft/ft), which is 5.4 to 6.1 times greater than the required gradient of 0.001 ft/ft. The gradient for the northern well pair ranged from 1.8 to 2.3 times the target gradient of 0.001 ft/ft. For the central well pair, the average landward gradient ranged from 10.2 to 11.9 times the target gradient. The southern well pair gradients averaged 3.8 to 4.4 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 July 2015 is based on the June 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 June 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 July 2015 (13,400 cubic feet per second) will be less than the actual release in June 2015 (13,616 cubic feet per second). Based on July 2015 USBR predictions, it is anticipated that the Colorado River level at the I-3 gauge location in July 2015 will be approximately 0.34 foot lower compared to the actual levels in June 2015. Current projections show that the water levels will continue to decrease through the rest of the next quarterly reporting period (July through October), as shown on Figure 4-7.

4.7 Quarterly Performance Monitoring Program Evaluation Summary

The groundwater elevation and hydraulic gradient data from April 2015 through June 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 Second Quarter 2015 were 5.4 to 6.1 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 Second Quarter 2015 reporting period.

A total of 16,152,830 gallons of groundwater was extracted from April through June 2015 by the IM-3 treatment facility. The average pumping rate for the IM extraction system during Second Quarter 2015, including system downtime, was 123.3 gpm. An estimated 73.9 pounds (33.5 kilograms) of chromium were removed and treated between March 1 and May 31, 2015. To date, the IMs have removed approximately 8,280 pounds of chromium from the floodplain at the Topock site through May 2015.

The wells that are monitored to detect trends in Cr(VI) in the IM pumping area (for example, MW-36-100, MW-39-100, MW-44-115, MW-44-125, 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

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 Third Quarter 2015 monitoring report, which will be submitted by December 15, 2015.

5.1 Groundwater Monitoring Program

5.1.1 Quarterly Monitoring

The Third Quarter monitoring event is planned for September 28, 2015 through October 8, 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 Third Quarter 2015 surface water monitoring event is planned at locations in the RMP monitoring network for September 2015. Results will be reported in the Third 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 Third 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 Third Quarter 2015. Downloads of the remainder of the transducers will occur during the first week of each month during Third Quarter 2015.

SECTION 6

References

Arizona Department of Environmental Quality (ADEQ). 2010. Email. "Re: Reminder – sampling frequency modification for Arizona wells proposed with 4Q2009 data submittal." April 23.

_____. 2015. Letter. "Response to Review of Arizona Monitoring Wells November – December 2014 Groundwater Sampling results." June 29.

California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). 2005a. Letter to PG&E. "Requirements for Groundwater and Surface Water Monitoring Program, Pacific Gas & Electric Company, Topock Compressor Station, Needles, California (EPA ID No. CAT080011729)." April 26.

_____. 2005b. Letter. "Criteria for Evaluating Interim Measures Performance Requirements to Hydraulically Contain Chromium Plume in Floodplain Area, Pacific Gas & Electric Company, Topock Compressor Station." February 14.

_____. 2005c. Letter. "Contingency Plan for Sentry Well Groundwater Monitoring." February 14.

_____. 2007a. Letter. "Approval of Updates and Modifications to the Interim Measures Performance Monitoring Program. Pacific Gas & Electric Company, Topock Compressor Station." October 12.

_____. 2007b. Letter. "Updates and Modifications to the PG&E's Topock Interim Measures Performance Monitoring Program. PG&E Topock Compressor Station, Needles, California." July 27.

_____. 2007c. Letter. "Conditional Approval of Updates and Modifications to the Groundwater and Surface Water Monitoring Program, Pacific Gas & Electric Company, Topock Compressor Station." September 28.

_____. 2008a. Letter. "Modifications to Hydraulic Data Collection for the Interim Measures Performance Monitoring Program at Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California." July 14.

_____. 2008b. Letter. "Modifications to Chemical Performance Monitoring and Contingency Plan for the Floodplain Interim Measures Performance Monitoring Program at Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California." July 17.

_____. 2009. Email. "Re: Request for Combined Reporting of Topock GMP and PMP." May 26.

_____. 2010a. Email. "RE: Topock GMP sampling event timing and reporting schedule." July 23.

_____. 2010b. Letter. "Arizona Monitoring Well Sampling Frequency Modification. Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California." April 28.

_____. 2010c. Email. "Topock GMP Monitoring Frequency Modification, Topock Compressor Station, Needles, California." March 3.

_____. 2011. Email. "RE: Topock GMP COPC sampling plan: topic for weekly tech calls." November 18.

_____. 2013. Letter. "Repairing Wells in Accordance with California Well Standards at Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California (EPA ID No. CAT080011729)." January 28.

_____. 2014. Email from Chris Guerre/DTSC to Yvonne Meeks/PG&E. "PG&E Topock: DTSC response to Section 7 2013 Annual Report Recommendations." June 27.

California Regional Water Quality Control Board. 2006. Letter to PG&E. "Request to Treat Groundwater Generated through Groundwater Monitoring and Other Field Activities through the Interim

Measures No. 3 Groundwater Remediation System Facility, PG&E Topock Compressor Station, Needles, California. January 26.

CH2M HILL. 2005a. *Sampling and Analysis Field Procedures Topock Program Manual, Revision 1, Pacific Gas and Electric Company, Topock Project*. March 31.

_____. 2005b. *Draft Performance Monitoring Plan for Interim Measures in the Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*. April 15.

_____. 2006. *Contingency Plan for IM Performance Monitoring, Revision 1*, dated August 2006. August 28.

_____. 2008. *Groundwater Background Study, Steps 3 and 4: Final Report of Results, PG&E Topock Compressor Station, Needles, California*. July 23.

_____. 2009a. *Revised Final RCRA Facility Investigation/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*. February 11.

_____. 2009b. *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*. June 29.

_____. 2009c. *Groundwater Corrective Measures Study/Feasibility Study Report for SWMU 1/AOC1 and AOC 10, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*. December 16.

_____. 2011a. *Fourth Quarter 2010 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. March 15.

_____. 2011b. *First Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. April 29.

_____. 2011c. *Second Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. August 15.

_____. 2011d. *Third Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. November 30.

_____. 2012a. *Fourth Quarter 2011 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. March 15.

_____. 2012b. *First Quarter 2012 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. April 30.

_____. 2012c. *Second Quarter 2012 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. August 15.

_____. 2012d. *Third Quarter 2012 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. November 30.

_____. 2013a. *Fourth Quarter 2012 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. March 15.

_____. 2013b. *First Quarter 2013 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. May 15.

_____. 2013c. *Second Quarter 2013 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. August 15.

_____. 2013d. *Third Quarter 2013 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. November 29.

_____. 2014a. *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*. March 14.

_____. 2014b. *First Quarter 2014 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. April 30.

_____. 2014c. *Second Quarter 2014 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. August 15.

_____. 2014d. *Third Quarter 2014 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. December 15.

_____. 2015a. *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*. March 13.

_____. 2015b. *First Quarter 2015 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. April 30.

Pacific Gas and Electric Company (PG&E). 2007. *Interim Measures Performance Monitoring Program, PG&E Topock Compressor Station, Needles, California*. July 27.

_____. 2008. *Approved Modifications to the Topock IM Performance Monitoring Program PG&E Topock Compressor Station, Needles, California*. August 4.

Tables

Table 1-1

Topock Monitoring Reporting Schedule
Second 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, April 2014 through June 2015
Second 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	Turbidity NTU
MW-9	SA	02-Dec-14	MD	210	210	2,700	-68	7.4	1.0
		12-May-15	MD	230	230	---	-170	7.6	1.0
MW-10	SA	14-May-14	3V	260	250	2,400	57	7.2	3.0
		14-May-14 FD	3V	260	260	2,400	FD	FD	FD
		02-Dec-14	MD	200	220	2,400	-66	7.4	15.0
		12-May-15	MD	280	290	---	-170	7.4	16.0
MW-11	SA	02-Dec-14	MD	130	120	2,100	-5	7.2	20.0
		02-Dec-14 FD	MD	130	120	2,100	FD	FD	FD
		12-May-15	MD	130	130	---	-140	7.5	2.0
MW-12	SA	01-May-14	3V	2,400	2,200	6,000	-19	8.1	2.0
		15-Dec-14	MD	2,300	2,300	7,100	-59	7.6	1.0
		19-May-15	MD	1,900	2,200	---	-81	7.7	1.0
MW-13	SA	13-Nov-14	MD	21.0	21.0	2,000	30	7.3	4.0
MW-14	SA	12-Nov-14	MD	15.0	16.0	1,900	12	7.5	18.0
		06-May-15	MD	16.0	18.0	---	-110	7.5	6.0
MW-15	SA	11-Nov-14	MD	13.0	13.0	1,700	28	7.4	2.0
MW-16	SA	22-Apr-14	3V	9.9	9.7	---	44	7.6	1.0
MW-17	SA	23-Apr-14	3V	12.0	12.0	---	36	7.9	1.0
MW-18	SA	13-Nov-14	MD	21.0	21.0	1,300	24	7.5	1.0
MW-19	SA	28-Apr-14	3V	550	520	---	77	7.3	1.0
		10-Dec-14	MD	630	680	2,300	-78	7.6	3.0
		14-May-15	MD	630	690	---	-110	7.4	15.0
MW-20-70	SA	07-May-14	3V	2,200	2,400	1,600	-7	7.5	1.0
		15-Dec-14	MD	2,000	2,100	1,900	-86	7.7	1.0
		19-May-15	MD	1,900	2,200	---	-180	7.3	4.0
		19-May-15 FD	MD	1,900	2,200	---	FD	FD	FD
MW-20-100	MA	07-May-14	3V	2,900	2,900	2,400	-40	7.2	0.40
		15-Dec-14	MD	1,900	1,900	2,600	-83	7.5	6.0
		19-May-15	MD	2,400	2,800	---	-190	7.2	3.0
MW-20-130	DA	12-May-14	3V	9,100	9,000	9,900	-85	7.5	1.0
		15-Dec-14	MD	6,600	6,600	11,000	-150	7.5	1.0
		15-Dec-14 FD	MD	6,500	6,300	11,000	FD	FD	FD

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-20-130	DA	19-May-15	MD	7,600	7,900	---	-250	7.2	2.0
MW-21	SA	22-Apr-14	3V	1.9	1.8	8,300	-190	7.2	---
		11-Nov-14	MD	2.4	2.7	9,300	-13	7.1	7.0
		06-May-15	MD	1.5	1.4	---	-340	7.2	36.0
MW-22	SA	30-Apr-14	3V	ND (1.0)	ND (1.0)	---	-160	6.8	18.0
		18-Dec-14	MD	ND (1.0)	ND (5.0)	27,000	-42	6.6	6.0
		22-Apr-15	MD	ND (1.0)	ND (1.0)	---	-390	6.9	5.0
MW-23-060	BR	22-Apr-14	3V	39.0	34.0	---	21	9.2	1.0
		10-Nov-14	3V	38.0	32.0	15,000	-62	9.2	1.0
		30-Apr-15	3V	38.0	34.0	---	70	8.9	1.0
MW-23-080	BR	22-Apr-14	3V	15.0	13.0	---	-60	10.1	1.0
		10-Nov-14	3V	5.3	5.2	15,000	-220	10.0	1.0
		30-Apr-15	3V	3.0	2.5	---	-140	10.1	1.0
MW-24A	SA	04-Nov-14	MD	ND (0.20)	ND (5.0)	1,800	-200	8.1	15.0
		29-Apr-15	MD	0.28	ND (1.0)	---	-200	8.3	5.0
		29-Apr-15 FD	MD	0.30	ND (1.0)	---	FD	FD	FD
MW-24B	DA	18-Dec-14	MD	ND (1.0)	5.4	18,000	-250	8.3	5.0
		29-Apr-15	MD	ND (1.0)	1.8	---	-280	7.7	3.0
MW-24BR	BR	29-Apr-14	3V	ND (1.0)	ND (1.0)	---	-250	8.0	1.0
		04-Dec-14	3V	ND (1.0)	ND (1.0)	14,000	-190	7.9	6.0
MW-25	SA	02-Dec-14	MD	140	130	1,600	-42	7.4	1.0
		11-May-15	MD	91.0	87.0	---	-140	8.0	1.0
MW-26	SA	05-May-14	3V	2,200	2,200	3,600	-8	7.3	1.0
		15-Dec-14	MD	2,400	2,300	4,300	-60	7.4	2.0
		15-Dec-14 FD	MD	2,200	2,300	4,300	FD	FD	FD
		19-May-15	MD	2,400	2,500	---	-240	7.5	2.0
MW-27-20	SA	14-Apr-14	3V	ND (0.20)	ND (1.0)	1,000	4.0	7.5	1.0
		04-Nov-14	MD	ND (0.20)	ND (1.0)	890	-21	7.5	2.0
MW-27-60	MA	14-Apr-14	3V	ND (0.20)	ND (1.0)	920	-190	7.6	1.0
		14-Apr-14 FD	3V	ND (0.20)	ND (1.0)	900	FD	FD	FD
		04-Nov-14	MD	ND (0.20)	ND (1.0)	970	-120	7.6	4.0
		04-Nov-14 FD	MD	ND (0.20)	ND (1.0)	980	FD	FD	FD
MW-27-85	DA	14-Apr-14	3V	ND (1.0)	ND (1.0)	11,000	-230	7.3	1.0

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-27-85	DA	04-Nov-14	MD	ND (0.20)	ND (1.0)	8,500	-25	7.4	1.0
		20-Apr-15	MD	ND (0.20)	ND (1.0)	---	-39	7.4	1.0
		20-Apr-15 FD	MD	ND (0.20)	ND (1.0)	---	FD	FD	FD
MW-28-25	SA	15-Apr-14	3V	ND (0.20)	ND (1.0)	910	-240	7.3	1.0
		11-Nov-14	MD	ND (0.20)	ND (1.0)	1,000	110	7.1	1.0
		21-Apr-15	MD	ND (0.20)	ND (1.0)	---	-280	7.0	1.0
MW-28-90	DA	15-Apr-14	3V	ND (0.20)	ND (1.0)	6,700	-220	7.2	1.0
		15-Apr-14 FD	3V	ND (0.20)	ND (1.0)	6,600	FD	FD	FD
		11-Nov-14	MD	ND (0.20)	ND (1.0)	6,200	-28	7.1	7.0
		21-Apr-15	MD	ND (0.20)	ND (1.0)	---	-38	7.1	10.0
MW-29	SA	16-Apr-14	3V	ND (0.20)	ND (1.0)	2,300	-170	7.3	1.0
		10-Nov-14	MD	ND (0.20)	ND (1.0)	2,100	-110	7.3	1.0
		21-Apr-15	MD	ND (0.20)	ND (1.0)	---	-310	7.2	1.0
MW-30-30	SA	14-Apr-14	3V	0.21	ND (1.0)	6,800	-260	7.8	1.0
		10-Nov-14	MD	0.21	ND (1.0)	10,000	-120	7.6	2.0
MW-30-50	MA	10-Nov-14	MD	ND (0.20)	ND (1.0)	1,000	7.3	7.6	1.0
		10-Nov-14 FD	MD	ND (0.20)	ND (1.0)	1,000	FD	FD	FD
MW-31-60	SA	12-May-14	3V	270	270	---	-30	7.5	1.0
		03-Dec-14	MD	600	660	2,700	-10	7.7	25.0
		13-May-15	MD	480	490	---	-190	7.5	1.0
MW-31-135	DA	05-Nov-14	MD	12.0	12.0	10,000	-200	7.8	8.0
MW-32-20	SA	11-Nov-14	MD	ND (1.0)	ND (5.0)	37,000	-94	6.8	4.0
		11-Nov-14 FD	MD	ND (1.0)	ND (5.0)	37,000	FD	FD	FD
MW-32-35	SA	16-Apr-14	3V	ND (1.0)	ND (1.0)	---	-190	7.1	1.0
		11-Nov-14	MD	ND (1.0)	ND (1.0)	11,000	-110	7.1	11.0
		20-Apr-15	MD	ND (0.20)	ND (1.0)	---	-260	7.5	5.0
MW-33-40	SA	17-Apr-14	3V	ND (0.20)	ND (1.0)	5,600	-170	8.1	1.0
		11-Nov-14	MD	ND (1.0)	ND (1.0)	14,000	100	7.6	1.0
		27-Apr-15	MD	ND (0.20)	ND (1.0)	---	-250	8.0	3.0
MW-33-90	MA	21-Apr-14	3V	11.0	10.0	8,800	-230	7.2	1.0
		21-Apr-14 FD	3V	12.0 J	9.8 J	8,700	FD	FD	FD
		12-Nov-14	MD	7.9	7.7	9,300	140	7.4	1.0
		27-Apr-15	MD	6.8	5.7	---	-310	7.2	4.0

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-33-150	DA	17-Apr-14	3V	12.0 J	9.6 J	14,000	-290	7.5	1.0
		12-Nov-14	MD	0.86	ND (1.0)	14,000	110	7.4	2.0
		27-Apr-15	MD	4.0	3.2	---	-250	7.5	4.0
MW-33-210	DA	21-Apr-14	3V	10.0	8.4	17,000	-300	7.3	1.0
		12-Nov-14	MD	13.0	12.0	18,000	140	7.4	8.0
		27-Apr-15	MD	7.9 J	6.4 J	---	-270	7.3	3.0
		27-Apr-15 FD	MD	7.7 J	6.3 J	---	FD	FD	FD
MW-34-55	MA	06-Nov-14	MD	ND (0.20)	ND (1.0)	840	-35	7.6	1.0
MW-34-80	DA	17-Apr-14	3V	ND (0.20)	ND (1.0)	---	-280	7.3	1.0
		06-Nov-14	MD	ND (0.20)	ND (1.0)	5,900	-4	7.3	2.0
		20-Apr-15	MD	ND (0.20)	ND (1.0)	---	-160	7.9	1.0
MW-34-100	DA	17-Apr-14	3V	3.0	3.5	---	-220	7.5	1.0
		02-Oct-14	MD	100	89.0	---	-230	7.4	1.0
		01-Dec-14	MD	220	230	17,000	-62	7.6	2.0
		01-Dec-14 FD	MD	230	220	17,000	FD	FD	FD
		16-Feb-15	MD	230	210	---	-270	8.0	2.0
		20-Apr-15	MD	7.6 J	5.4 J	---	-410	7.7	3.0
		20-Apr-15 FD	MD	7.7 J	5.7 J	---	FD	FD	FD
MW-35-60	SA	24-Apr-14	3V	25.0	24.0	5,600	0.0	7.4	1.0
		24-Apr-14 FD	3V	25.0	22.0	5,700	FD	FD	FD
		13-Nov-14	MD	21.0	20.0	6,700	-97	7.3	1.0
		07-May-15	MD	24.0	24.0	---	-220	7.3	2.0
MW-35-135	DA	24-Apr-14	3V	29.0	25.0	---	-86	7.5	1.0
		13-Nov-14	MD	30.0	28.0	10,000	-200	7.6	2.0
		07-May-15	MD	28.0	25.0	---	---	7.3	4.0
MW-36-20	SA	15-Dec-14	MD	ND (0.20)	ND (1.0)	11,000	-130	7.5	1.0
MW-36-40	SA	15-Dec-14	MD	0.34	ND (1.0)	1,200	-110	7.9	1.0
MW-36-50	MA	15-Dec-14	MD	ND (0.20)	ND (1.0)	1,200	-35	7.7	1.0
MW-36-70	MA	15-Dec-14	MD	ND (0.20)	ND (1.0)	1,000	-24	7.8	1.0
MW-36-90	DA	17-Apr-14	3V	ND (0.20)	ND (1.0)	---	-310	8.2	1.0
		15-Dec-14	MD	ND (0.20)	ND (1.0)	1,200	16	8.5	1.0
		23-Apr-15	MD	ND (0.20)	ND (1.0)	---	-360	7.8	2.0
MW-36-100	DA	17-Apr-14	3V	48.0	47.0	7,000	-360	7.3	1.0

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-36-100	DA	13-Nov-14	MD	65.0	62.0	7,400	-20	7.2	2.0
		23-Apr-15	MD	59.0	51.0	---	---	7.3	3.0
MW-37S	MA	12-Nov-14	MD	11.0	11.0	5,500	-88	7.6	4.0
MW-37D	DA	10-Apr-14	3V	110	99.0	15,000	-190	7.6	1.0
		02-Dec-14	MD	8.0	7.5	14,000	-190	7.6	3.0
		27-Apr-15	MD	8.3 J	6.7 J	---	-220	7.6	4.0
MW-38S	SA	14-May-14	3V	1.5	2.1	---	-260	7.6	1.0
		22-Sep-14	3V	ND (0.20)	ND (1.0)	---	---	7.9	1.0
		05-Nov-14	3V	ND (0.20)	ND (1.0)	1,500	-260	7.8	1.0
		09-Feb-15	3V	ND (0.20)	ND (1.0)	---	-230	7.5	2.0
		30-Apr-15	3V	ND (0.20)	ND (1.0)	---	-290	7.6	1.0
MW-38D	DA	14-May-14	3V	17.0	14.0	---	-310	8.0	1.0
		05-Nov-14	3V	17.0	15.0	20,000	-260	8.3	2.0
		30-Apr-15	3V	16.0	14.0	---	-280	7.9	1.0
MW-39-40	SA	16-Dec-14	MD	ND (0.20)	ND (1.0)	1,400	-130	8.0	2.0
MW-39-50	MA	16-Dec-14	MD	ND (0.20)	ND (1.0)	1,300	8.9	7.8	1.0
MW-39-60	MA	16-Dec-14	MD	ND (0.20)	ND (1.0)	1,500	39	8.0	1.0
		16-Dec-14 FD	MD	ND (0.20)	ND (1.0)	1,500	FD	FD	FD
MW-39-70	MA	16-Dec-14	MD	ND (0.20)	ND (1.0)	2,200	25	7.9	1.0
MW-39-80	DA	16-Dec-14	MD	ND (0.20)	ND (1.0)	4,400	44	7.7	1.0
MW-39-100	DA	01-Dec-14	MD	57.0	49.0	15,000	-310	6.7	2.0
		21-Apr-15	MD	7.4 J	5.9 J	---	-220	7.6	1.0
MW-40S	SA	04-Dec-14	MD	7.6	7.1	2,100	-37	7.2	8.0
MW-40D	DA	24-Apr-14	3V	130	110	13,000	-13	7.4	1.0
		04-Dec-14	MD	160	140	13,000	-89	7.5	2.0
		12-May-15	MD	120	110	---	-310	7.0	9.0
MW-41S	SA	04-Nov-14	MD	17.0	17.0	4,900	-110	7.6	2.0
MW-41M	DA	04-Nov-14	MD	9.5	8.8	13,000	-110	7.0	1.0
		04-Nov-14 FD	MD	9.5	9.0	13,000	FD	FD	FD
MW-41D	DA	10-Apr-14	3V	2.6	2.4	---	-210	7.6	1.0
		17-Dec-14	MD	ND (1.0)	1.0	22,000	-94	7.3	1.0
		06-May-15	MD	ND (1.0)	ND (1.0)	---	-270	6.9	1.0

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-42-30	SA	05-Nov-14	MD	0.54	ND (1.0)	2,400	-170	8.0	13.0
MW-42-55	MA	14-Apr-14	3V	0.23	1.6	---	-210	8.0	1.0
		06-Nov-14	MD	0.35	2.8	1,200	-71	8.2	7.0
		20-Apr-15	MD	0.22	1.7	---	-310	8.3	4.0
MW-42-65	MA	14-Apr-14	3V	ND (0.20)	ND (1.0)	---	-220	7.3	1.0
		06-Nov-14	MD	ND (0.20)	ND (1.0)	6,000	22	7.4	2.0
		20-Apr-15	MD	ND (0.20)	ND (1.0)	---	-350	7.5	2.0
MW-43-25	SA	15-Apr-14	3V	ND (0.20)	ND (1.0)	---	-170	7.2	60.0
		05-Nov-14	MD	ND (0.20)	ND (1.0)	1,400	-140	7.3	2.0
MW-43-75	DA	05-Nov-14	MD	ND (0.20)	ND (1.0)	9,200	-87	7.1	8.0
MW-43-90	DA	15-Apr-14	3V	ND (1.0)	ND (1.0)	---	-160	6.9	1.0
		05-Nov-14	MD	ND (1.0)	ND (1.0)	15,000	-40	6.9	42.0
MW-44-70	MA	16-Apr-14	3V	ND (0.20)	ND (1.0)	---	-290	7.4	1.0
		11-Nov-14	MD	ND (0.20)	ND (1.0)	2,000	29	7.6	4.0
		23-Apr-15	MD	ND (0.20)	ND (1.0)	---	-340	7.1	3.0
MW-44-115	DA	16-Apr-14	3V	40.0	37.0	11,000	-300	7.8	1.0
		23-Sep-14	MD	37.0	32.0	---	---	8.0	5.0
		23-Sep-14 FD	MD	37.0	31.0	---	FD	FD	FD
		12-Nov-14	MD	32.0	30.0	11,000	52	7.9	8.0
		17-Feb-15	MD	37.0	31.0	---	-200	7.1	8.0
		17-Feb-15 FD	MD	37.0	31.0	---	FD	FD	FD
		23-Apr-15	MD	31.0	28.0	---	-300	6.9	5.0
MW-44-125	DA	16-Apr-14	3V	ND (0.20)	5.5	9,200	-230	7.5	1.0
		16-Apr-14 FD	3V	ND (0.20)	5.1	9,200	FD	FD	FD
		12-Nov-14	MD	4.0 J	5.9	8,100	-51	7.5	2.0
		12-Nov-14 FD	MD	2.9 J	4.8	8,400	FD	FD	FD
		23-Apr-15	MD	1.2 J	5.4	---	-340	7.1	3.0
		23-Apr-15 FD	MD	1.5 J	6.2	---	FD	FD	FD
MW-46-175	DA	15-Apr-14	3V	21.0	19.0	19,000	-330	8.2	1.0
		23-Sep-14	MD	14.0	13.0	---	-300	8.4	1.0
		13-Nov-14	MD	23.0	25.0	19,000	65	8.2	6.0
		16-Feb-15	MD	25.0	21.0	---	-270	8.2	2.0
		21-Apr-15	MD	13.0 J	9.4 J	---	-310	8.2	1.0

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-46-205	DA	15-Apr-14	3V	5.5	4.8	---	-420	8.3	1.0
		13-Nov-14	MD	1.5	1.9	2,200	130	8.1	2.0
		21-Apr-15	MD	1.4	ND (1.0)	---	-280	8.2	1.0
MW-47-55	SA	23-Apr-14	3V	16.0	14.0	---	-11	7.4	2.0
		11-Nov-14	MD	16.0	16.0	4,600	-74	7.5	1.0
		07-May-15	MD	15.0	15.0	---	-170	7.8	2.0
MW-47-115	DA	23-Apr-14	3V	23.0	20.0	---	-180	7.5	1.0
		23-Apr-14 FD	3V	24.0	20.0	---	FD	FD	FD
		11-Nov-14	MD	19.0	17.0	13,000	-290	7.3	2.0
		07-May-15	MD	23.0	22.0	---	---	7.2	8.0
MW-48	BR	23-Apr-14	3V	ND (1.0)	ND (1.0)	---	-200	6.6	1.0
		06-Nov-14	3V	ND (1.0)	ND (1.0)	16,000	-83	7.0	5.0
		07-May-15	3V	ND (1.0)	ND (1.0)	---	-37	6.4	9.0
MW-49-135	DA	22-Dec-14	MD	2.3	2.0	14,000	-230	7.7	12.0
MW-49-275	DA	17-Dec-14	MD	ND (1.0)	1.2	27,000	-150	8.0	5.0
MW-49-365	DA	17-Dec-14	MD	ND (1.0)	ND (5.0)	39,000	-190	7.8	1.0
		17-Dec-14 FD	MD	ND (1.0)	ND (5.0)	39,000	FD	FD	FD
MW-50-095	MA	23-Apr-14	3V	13.0	12.0	---	-10	7.7	2.0
		11-Nov-14	MD	13.0	12.0	4,900	-73	7.5	2.0
		06-May-15	MD	14.0	13.0	---	-200	7.6	2.0
MW-50-200	DA	12-May-14	3V	7,400	7,200	---	-7	7.7	1.0
		16-Dec-14	MD	4,800	5,200	21,000	-7	7.7	10.0
		20-May-15	MD	3,800	4,000	---	-240	6.9	1.0
MW-51	MA	12-May-14	3V	4,800	4,700	9,900	-50	7.5	1.0
		15-Dec-14	MD	4,400	4,800	12,000	-130	7.5	1.0
		20-May-15	MD	4,600	5,100	---	-270	7.5	1.0
MW-52S	MA	30-Apr-14	Slant	ND (0.20)	ND (1.0)	---	-200	6.8	1.0
		17-Dec-14	Slant	ND (1.0)	ND (1.0)	9,100	-88	6.8	1.0
		22-Apr-15	Slant	ND (0.20)	ND (1.0)	---	---	6.9	1.0
MW-52M	DA	30-Apr-14	Slant	ND (1.0)	ND (1.0)	---	-280	7.4	2.0
		17-Dec-14	Slant	ND (1.0)	ND (1.0)	16,000	-120	7.5	1.0
		22-Apr-15	Slant	ND (1.0)	ND (1.0)	---	---	7.7	1.0
MW-52D	DA	30-Apr-14	Slant	ND (1.0)	ND (1.0)	---	-260	7.7	0.20

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-52D	DA	17-Dec-14	Slant	ND (1.0)	ND (1.0)	22,000	-150	7.9	1.0
		22-Apr-15	Slant	ND (1.0)	ND (1.0)	---	---	8.0	1.0
MW-53M	DA	30-Apr-14	Slant	ND (1.0)	ND (1.0)	---	-240	7.9	0.18
		17-Dec-14	Slant	ND (1.0)	ND (1.0)	20,000	-160	8.0	1.0
		22-Apr-15	Slant	ND (1.0)	ND (1.0)	---	-400	7.8	1.0
MW-53D	DA	30-Apr-14	Slant	ND (1.0)	ND (1.0)	---	-260	8.2	0.20
		17-Dec-14	Slant	ND (1.0)	ND (5.0)	27,000	-150	8.2	1.0
		22-Apr-15	Slant	ND (1.0)	ND (1.0)	---	-320	8.1	1.0
MW-54-85	DA	09-Apr-14	3V	ND (1.0) J	ND (1.0)	9,230 J	-220	7.6	1.0
		18-Nov-14	MD	ND (0.20)	ND (1.0)	10,600	-220	7.3	7.0
		18-Nov-14 FD	MD	ND (0.20)	ND (1.0)	10,500	FD	FD	FD
		28-Apr-15	MD	ND (1.0)	ND (1.0)	---	-240	7.5	2.0
MW-54-140	DA	09-Apr-14	3V	ND (1.0) J	ND (1.0)	12,300 J	-230	7.7	1.0
		09-Apr-14 FD	3V	ND (1.0) J	ND (1.0)	12,200 J	FD	FD	FD
		18-Nov-14	MD	ND (0.20)	ND (1.0)	12,900	-240	7.7	4.0
		28-Apr-15	MD	ND (1.0)	ND (1.0)	---	-260	7.5	4.0
MW-54-195	DA	09-Apr-14	3V	ND (1.0) J	ND (1.0)	18,300 J	-240	8.0	1.0
		18-Nov-14	MD	ND (2.0)	ND (1.0)	19,500	-290	7.9	1.0
		28-Apr-15	MD	ND (2.0)	ND (1.0)	---	-270	8.0	4.0
MW-55-45	MA	18-Nov-14	MD	ND (1.0)	ND (1.0)	1,470	-270	7.4	34.0
		29-Apr-15	MD	ND (0.20)	ND (1.0)	---	-180	7.7	3.0
		29-Apr-15 FD	MD	ND (0.20)	ND (1.0)	---	FD	FD	FD
MW-55-120	DA	18-Nov-14	MD	7.5	7.2	8,930	-87	7.7	3.0
		29-Apr-15	MD	6.7	7.0	---	-150	7.7	9.0
MW-56S	SA	10-Apr-14	Slant	ND (1.0) J	5.3	6,390 J	-230	7.0	1.0
		18-Dec-14	Slant	ND (0.20)	ND (1.0)	7,080	-72	7.0	1.0
		28-Apr-15	Slant	ND (0.20)	ND (1.0)	---	-260	7.0	1.0
MW-56M	DA	10-Apr-14	Slant	ND (1.0) J	1.8	14,400 J	-250	7.3	2.0
		18-Dec-14	Slant	ND (1.0)	ND (5.0)	14,100	-90	7.2	1.0
		28-Apr-15	Slant	ND (2.0)	ND (1.0)	---	-240	7.2	2.0
MW-56D	DA	10-Apr-14	Slant	ND (1.0) J	ND (1.0)	19,800 J	-260	7.7	1.0
		18-Dec-14	Slant	ND (1.0)	ND (5.0)	2,040	-140	7.6	1.0
		28-Apr-15	Slant	ND (2.0)	ND (1.0)	---	-280	7.7	3.0

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-57-070	BR	28-Apr-14	3V	430	460	---	86	7.0	3.0
		10-Dec-14	3V	530	520	2,700	-30	7.0	8.0
		21-May-15	3V	410	420	---	-240	7.2	2.0
MW-57-185	BR	22-Apr-14	3V	8.8	7.8	17,000	-81	8.8	2.0
		10-Nov-14	3V	9.5	8.9	17,000	-220	9.2	1.0
		11-May-15	3V	10.0	9.0	---	-300	9.1	1.0
MW-58BR	BR	06-May-14	MD	0.87	ND (1.0)	---	-270	7.6	1.0
		24-Sep-14	MD	2.1	2.2	---	---	7.5	1.0
		09-Dec-14	MD	3.6	3.0	8,800	-180	7.6	0.50
		10-Feb-15	MD	3.6	3.5	---	-220	7.6	1.0
		18-May-15	MD	ND (0.20)	ND (1.0)	---	-220	7.2	1.0
MW-59-100	SA	07-May-14	3V	4,000	4,000	9,600	-10	7.0	2.0
		15-Dec-14	MD	4,100	4,100	11,000	-30	7.1	1.0
		15-Dec-14 FD	MD	4,200	3,900	11,000	FD	FD	FD
		19-May-15	MD	3,900	4,300	---	-120	7.0	2.0
MW-60-125	BR	01-May-14	3V	1,200	1,100	7,700	-42	7.5	2.0
		10-Dec-14	3V	950	980	8,900	-130	7.4	5.0
		14-May-15	3V	1,100	1,200	---	-170	7.0	4.0
MW-60BR-245	BR	29-Apr-14	3V	ND (1.0)	1.2	16,000	-76	8.1	1.0
		25-Sep-14	3V	1.5	3.0	---	---	8.4	1.0
		04-Dec-14	3V	ND (1.0)	ND (1.0)	16,000	-240	7.8	2.0
		10-Feb-15	3V	3.6	5.2	---	-240	7.9	2.0
		14-May-15	3V	ND (1.0)	ND (1.0)	---	---	7.4	2.0
MW-61-110	BR	29-Apr-14	3V	470	460	15,000	-160	7.5	2.0
		10-Dec-14	3V	570	540	16,000	-120	7.1	5.0
		13-May-15	3V	440	500	---	-140	7.3	2.0
MW-62-065	BR	29-Apr-14	3V	550	550	---	-1	7.4	6.0
		23-Sep-14	3V	540	500	---	---	7.4	2.0
		09-Dec-14	3V	530	500	6,000	-110	7.4	4.0
		16-Feb-15	3V	520	510	---	-30	7.1	2.0
		16-Feb-15 FD	3V	530	510	---	FD	FD	FD
		13-May-15	3V	580	620	---	-98	7.4	2.0
		13-May-15 FD	3V	580	620	---	FD	FD	FD
MW-62-110	BR	07-May-14	Flute	910	940	8,000	30	7.1	0.30

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-62-110	BR	23-Sep-14	Flute	1,000	1,000	---	---	7.5	0.30
		09-Dec-14	Flute	1,200	1,200	8,500	-50	6.9	0.50
		11-Feb-15	Flute	1,200	1,300	---	72	7.0	2.0
		19-May-15	Flute	1,000	1,100	---	-120	6.5	2.0
MW-62-190	BR	07-May-14	Flute	ND (1.0)	ND (1.0)	16,000	-65	7.2	0.30
		09-Dec-14	Flute	ND (1.0)	ND (1.0)	17,000	-59	6.7	0.60
		19-May-15	Flute	ND (0.20)	ND (1.0)	---	-280	6.4	2.0
MW-63-065	BR	09-Apr-14	3V	1.4	1.1	6,600	-1	7.1	4.0
		22-Sep-14	3V	1.6	1.4	---	---	7.2	2.0
		05-Nov-14	3V	1.6	1.6	6,400	-21	7.0	8.0
		10-Feb-15	3V	1.5	1.9	---	-70	7.2	6.0
		29-Apr-15	3V	1.4	1.3	---	-160	7.1	6.0
MW-64BR	BR	06-May-14	MD	ND (1.0)	ND (1.0)	---	-200	7.5	6.0
		30-Sep-14	MD	ND (1.0)	ND (1.0)	---	-190	7.3	16.0
		08-Dec-14	MD	ND (1.0)	ND (1.0)	14,000	-140	7.3	6.0
		18-Feb-15	MD	ND (1.0)	1.3	---	-190	7.3	621
		18-May-15	MD	ND (5.0)	11.0	---	-170	7.4	>1,000
MW-65-160	SA	24-Apr-14	3V	110	95.0	3,600	-17	7.1	2.0
		25-Sep-14	MD	90.0	83.0	---	---	7.3	12.0
		03-Dec-14	MD	97.0	92.0	3,400	-82	7.2	219
		24-Mar-15	MD	140	120	---	-130	7.0	1.0
		11-May-15	MD	110	110	---	-240	8.0	2.0
		11-May-15 FD	MD	110	110	---	FD	FD	FD
MW-65-225	DA	29-Apr-14	3V	460	450	12,000	-57	7.3	1.0
		25-Sep-14	MD	130	110	---	---	7.5	75.0
		03-Dec-14	MD	120	130	15,000	-60	7.4	10.0
		17-Feb-15	MD	150	140	---	-140	7.3	9.0
		11-May-15	MD	160	140	---	-140	7.1	6.0
MW-66-165	SA	01-May-14	3V	750	720	3,800	110	7.2	5.0
		01-May-14 FD	3V	720	750	3,800	FD	FD	FD
		10-Dec-14	MD	590	580	4,400	-73	7.2	10.0
		13-May-15	MD	650	760	---	-180	7.4	8.0
MW-66-230	DA	07-May-14	3V	6,700	6,700	17,000	-130	8.0	1.0
		22-Dec-14	MD	5,500	6,400	19,000	-81	7.6	7.0

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-66-230	DA	21-May-15	MD	6,500	7,000	---	---	7.0	1.0
MW-66BR-270	BR	13-May-14	3V	ND (1.0)	ND (1.0)	15,000	-350	9.6	7.0
		16-Dec-14	3V	ND (1.0)	ND (5.0)	18,000	-380	8.8	9.0
		18-May-15	3V	ND (0.20)	ND (1.0)	---	---	8.4	28.0
MW-67-185	SA	05-May-14	3V	2,300	2,500	5,000	-32	7.2	2.0
		11-Dec-14	MD	1,900	1,600	6,200	-48	7.1	10.0
		20-May-15	MD	1,800	2,100	---	-150	7.7	7.0
MW-67-225	MA	06-May-14	3V	3,200	3,300	6,300	-81	7.4	1.0
		11-Dec-14	MD	3,200	3,200	7,300	-130	7.6	116
		20-May-15	MD	3,200	3,400	---	-280	7.4	8.0
MW-67-260	DA	05-May-14	3V	2,000	1,900	15,000	-250	8.5	1.0
		11-Dec-14	MD	740	680	18,000	-200	8.4	10.0
		20-May-15	MD	700	730	---	---	8.6	1.0
MW-68-180	SA	12-May-14	3V	10,000	11,000	3,000	34	7.3	---
		30-Sep-14	MD	27,000	28,000	---	5.0	7.3	24.0
		09-Dec-14	MD	30,000	31,000	4,300	-58	7.6	10.0
		18-Feb-15	MD	31,000	33,000	---	-54	7.5	4.0
		18-May-15	MD	12,000	13,000	---	-140	7.7	8.0
MW-68-240	DA	06-May-14	3V	2,200	2,100	14,000	-190	7.3	1.0
		06-May-14 FD	3V	2,200	2,100	14,000	FD	FD	FD
		18-Dec-14	MD	2,100	2,200	16,000	-81	7.1	1.0
		21-May-15	MD	2,200	2,500	---	---	7.1	1.0
MW-68BR-280	BR	13-May-14	3V	ND (1.0)	ND (1.0)	19,000	-200	8.3	3.0
		18-Dec-14	3V	ND (1.0)	ND (5.0)	21,000	-200	8.7	5.0
		27-May-15	3V	ND (1.0)	ND (1.0)	---	-370	8.2	4.0
MW-69-195	BR	01-May-14	3V	1,000	1,000	3,100	53	7.1	2.0
		25-Sep-14	3V	860	950	---	---	7.3	4.0
		25-Sep-14 FD	3V	930	990	---	FD	FD	FD
		11-Dec-14	3V	950	970	3,600	0.0	7.1	1.0
		17-Feb-15	3V	930	800	---	-75	7.6	2.0
		14-May-15	3V	970	1,100	---	-110	7.0	1.0
		14-May-15 FD	3V	980	1,100	---	FD	FD	FD
MW-70-105	BR	28-Apr-14	3V	75.0	70.0	3,200	-130	7.8	6.0

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
MW-70-105	BR	02-Dec-14	3V	130	120	3,400	-240	7.7	2.0
		07-May-15	3V	150	130	---	-250	7.7	1.0
MW-70BR-225	BR	05-May-14	3V	2,400	2,500	12,000	-160	7.3	1.0
		16-Dec-14	3V	1,900	2,200	14,000	-190	7.4	0.40
		27-May-15	3V	2,300	2,400	---	---	7.5	1.0
MW-71-035	SA	24-Apr-14	3V	1.0	1.0	7,700	20	7.3	20.0
		06-Nov-14	MD	1.2	15.0	14,000	-69	6.7	362
		06-May-15	MD	ND (1.0)	ND (1.0)	---	-170	6.9	313
MW-72-080	BR	24-Apr-14	3V	100	82.0	16,000	-12	7.5	6.0
		22-Sep-14	3V	140	120	---	---	7.7	2.0
		01-Dec-14	3V	130	110	16,000	-280	7.6	2.0
		11-Feb-15	3V	130	110	---	-150	7.9	5.0
		11-May-15	3V	92.0	85.0	---	-210	7.5	2.0
MW-72BR-200	BR	21-Apr-14	3V	6.2 J	4.7 J	14,000	26	8.4	0.90
		24-Sep-14	3V	5.4	4.5	---	---	8.3	1.0
		17-Nov-14	3V	5.8	6.0	16,000	-300	8.2	1.0
		11-Feb-15	3V	6.5	5.6	---	-280	8.3	1.0
		04-May-15	3V	4.3	3.7	---	-310	8.1	1.0
MW-73-080	BR	29-Apr-14	3V	53.0	48.0	11,000	89	7.1	5.0
		23-Sep-14	3V	27.0	23.0	---	100	7.1	100
		02-Dec-14	3V	41.0	37.0	10,000	11	6.6	30.0
		10-Feb-15	3V	21.0	20.0	---	-86	8.2	88.0
		06-May-15	3V	42.0	41.0	---	-160	7.6	36.0
MW-74-240	BR	01-May-14	3V	ND (0.20)	ND (1.0)	800	-160	8.1	20.0
		11-Dec-14	3V	ND (0.20)	ND (1.0)	990	-190	8.3	48.0
		14-May-15	3V	ND (0.20)	1.2	---	-390	8.4	84.0
OW-3S	SA	12-Nov-14	3V	23.0	23.0	1,400	18	7.7	13.0
		12-Nov-14 FD	3V	23.0	24.0	1,400	FD	FD	FD
OW-3M	MA	12-Nov-14	MD	16.0	15.0	5,700	-110	7.7	2.0
OW-3D	DA	12-Nov-14	MD	11.0	10.0	8,800	-140	7.7	1.0
PE-1	DA	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	---	---	---

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
PE-1	DA	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	---	---	---
		07-Apr-15	Tap	3.6	3.6	4,200	---	---	---
		05-May-15	Tap	2.9	2.5	4,200	---	---	---
		02-Jun-15	Tap	3.4	3.1	4,200	---	7.5	---
PGE-7BR	BR	04-Dec-14	3V	ND (1.0)	ND (1.0)	17,000	-190	6.9	19.0
PGE-8 [a]	BR	07-Jan-15	3V	ND (1.0)	ND (1.0)	17,000	-420	8.2	1.0
Park Moabi-3	MA	23-Dec-14	Tap	9.2	8.6	1,500	-38	7.4	0.68
		17-Mar-15	Tap	9.3	8.4 UF	---	-42	7.3	0.70
Park Moabi-4	MA	23-Dec-14	Tap	18.0	16.0	2,000	-39	7.5	0.76
		17-Mar-15	Tap	18.0	17.0 UF	---	-46	7.4	0.80
TW-1	SA-MA-DA	13-May-14	3V	2,800	2,700	6,000	-140	7.3	1.0
		22-Dec-14	3V	2,100	2,200	7,200	-120	7.3	1.0
		27-May-15	3V	2,500	2,600	---	---	7.1	1.0
TW-2S [a]	SA-MA	13-Jan-15	Tap	590	570	2,100	-42	7.5	1.0
TW-2D	DA	15-Dec-14	Tap	48.0	44.0	7,300	99	7.6	1.0
		15-Dec-14 FD	Tap	47.0	43.0	7,300	FD	FD	FD
TW-3D	DA	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	---	---	---

Refer to table footnotes for data qualifier explanation.

TABLE 3-1
Groundwater Sampling Results, April 2014 through June 2015
Second 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	Turbidity NTU
TW-3D	DA	03-Feb-15	Tap	790	760	7,300	---	---	---
		17-Mar-15	Tap	740	690	7,800	---	---	---
		07-Apr-15	Tap	730	730	8,400	---	---	---
		05-May-15	Tap	700	640	7,500	---	---	---
		02-Jun-15	Tap	700	650	7,700	---	7.6	---

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.
MD = minimal drawdown.
ND = not detected at listed RL.
NTU = nephelometric turbidity unit.
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 (MD) 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, Second Quarter 2015

Second 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-9	SA	12-May-15	MD	1.7	3.0	5.1	ND (0.50)	10.0
MW-10	SA	12-May-15	MD	---	26.0	6.2	---	11.0
MW-11	SA	12-May-15	MD	1.4	6.0	4.8	ND (0.50)	6.60
MW-12	SA	19-May-15	MD	---	12.0	20.0	---	15.0
MW-14	SA	06-May-15	MD	0.88	15.0	2.3	ND (0.50)	4.10
MW-20-70	SA	19-May-15	MD	---	41.0	4.6	---	7.90
		19-May-15 FD	MD	---	42.0	4.9	---	7.60
MW-20-100	MA	19-May-15	MD	---	3.7	5.3	---	9.60
MW-20-130	DA	19-May-15	MD	4.8	35.0	29.0	ND (0.50)	14.0
MW-21	SA	06-May-15	MD	---	88.0	15.0	---	2.20
MW-22	SA	22-Apr-15	MD	12.0	---	---	2200	---
MW-23-060	BR	30-Apr-15	3V	3.1	---	---	ND (0.50)	---
MW-23-080	BR	30-Apr-15	3V	3.6	---	---	ND (0.50)	---
MW-24A	SA	29-Apr-15	MD	ND (0.10)	120	ND (0.50)	12.0	ND (0.058)
		29-Apr-15 FD	MD	ND (0.10)	120	ND (0.50)	12.0	ND (0.050)
MW-24B	DA	29-Apr-15	MD	2.3	54.0	ND (1.0)	ND (0.50)	ND (0.054)
MW-25	SA	11-May-15	MD	1.1	2.4	6.1	ND (0.50)	9.20
MW-26	SA	19-May-15	MD	1.8	30.0	46.0	ND (0.50)	23.0
MW-27-85	DA	20-Apr-15	MD	1.0	15.0	ND (0.50)	18.0	ND (0.050)
		20-Apr-15 FD	MD	1.0	15.0	ND (2.5)	18.0	ND (0.050)
MW-28-25	SA	21-Apr-15	MD	1.1	3.3	ND (0.50)	ND (0.50)	ND (0.050)
MW-28-90	DA	21-Apr-15	MD	1.7	19.0	ND (0.50)	140	ND (0.050)
MW-29	SA	21-Apr-15	MD	6.8	22.0	2.8	280	0.190
MW-31-60	SA	13-May-15	MD	1.1	---	---	ND (0.50)	---
MW-32-35	SA	20-Apr-15	MD	2.3	9.7	ND (0.50)	310	2.30
MW-33-40	SA	27-Apr-15	MD	11.0	130	ND (0.50)	ND (0.50)	ND (0.050)
MW-33-90	MA	27-Apr-15	MD	0.99	12.0	ND (0.50)	ND (0.50)	1.00
MW-33-150	DA	27-Apr-15	MD	1.0	51.0	ND (2.5)	ND (0.50)	1.40
MW-33-210	DA	27-Apr-15	MD	0.92	20.0	ND (2.5)	ND (0.50)	1.20
		27-Apr-15 FD	MD	0.88	20.0	ND (2.5)	ND (0.50)	1.20
MW-34-80	DA	20-Apr-15	MD	1.3	11.0	ND (0.50)	ND (0.50)	ND (0.050)
MW-34-100	DA	20-Apr-15	MD	0.84	28.0	ND (2.5)	ND (0.50)	ND (0.050)
		20-Apr-15 FD	MD	0.86	30.0	ND (0.50)	ND (0.50)	ND (0.056)
MW-35-60	SA	07-May-15	MD	1.1	10.0	1.0	ND (0.50)	2.50
MW-35-135	DA	07-May-15	MD	0.85	20.0	0.98	ND (0.50)	2.80

TABLE 3-2
Groundwater COPCs and In Situ Byproducts Sampling Results, Second Quarter 2015
Second 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-36-90	DA	23-Apr-15	MD	20.0	---	---	0.81	---
MW-36-100	DA	23-Apr-15	MD	8.3	29.0	ND (0.50)	ND (0.50)	ND (0.13)
MW-37D	DA	27-Apr-15	MD	---	46.0	ND (2.5)	---	0.220
MW-38D	DA	30-Apr-15	3V	6.3	90.0	ND (2.5)	ND (0.50) J	ND (0.066)
MW-38S	SA	30-Apr-15	3V	13.0	38.0	ND (0.50)	240	ND (0.050)
MW-39-100	DA	21-Apr-15	MD	4.1	8.8	ND (0.50)	ND (0.50)	ND (0.097)
MW-40D	DA	12-May-15	MD	4.3	53.0	ND (2.5)	ND (0.50) J	2.90
MW-41D	DA	06-May-15	MD	1.8	99.0	ND (2.5)	ND (0.50)	0.520
MW-42-55	MA	20-Apr-15	MD	21.0	---	---	12.0	---
MW-42-65	MA	20-Apr-15	MD	3.2	---	---	680	---
MW-44-70	MA	23-Apr-15	MD	3.7	---	---	110	---
MW-44-115	DA	23-Apr-15	MD	5.2	90.0	ND (0.50)	ND (0.50)	0.200
MW-44-125	DA	23-Apr-15	MD	3.1	49.0	ND (0.50)	390	ND (0.11)
		23-Apr-15 FD	MD	3.1	51.0	ND (0.50)	400	ND (0.13)
MW-46-175	DA	21-Apr-15	MD	---	120	ND (0.50)	---	1.10
MW-47-55	SA	07-May-15	MD	1.0	---	---	ND (0.50)	---
MW-51	MA	20-May-15	MD	3.4	48.0	15.0	ND (0.50)	11.0
MW-52D	DA	22-Apr-15	Slant	2.8	---	---	77.0	---
MW-52M	DA	22-Apr-15	Slant	1.5	---	---	38.0	---
MW-52S	MA	22-Apr-15	Slant	0.12	---	---	2000	---
MW-53D	DA	22-Apr-15	Slant	3.0	---	---	1200	---
MW-53M	DA	22-Apr-15	Slant	0.68	---	---	270	---
MW-54-85	DA	28-Apr-15	MD	4.5	---	---	614	---
MW-54-140	DA	28-Apr-15	MD	3.1	---	---	104	---
MW-54-195	DA	28-Apr-15	MD	1.1	---	---	175	---
MW-57-070	BR	21-May-15	3V	1.3	3.5	3.0	ND (0.50)	8.20
MW-57-185	BR	11-May-15	3V	15.0	88.0	ND (2.5)	220	ND (0.050)
MW-58BR	BR	18-May-15	MD	1.2	26.0	1.3	130	0.210
MW-59-100	SA	19-May-15	MD	2.2	6.7	2.5	ND (0.50)	3.20
MW-60-125	BR	14-May-15	3V	1.3	18.0	5.1	ND (0.50)	6.50
MW-60BR-245	BR	14-May-15	3V	6.7	63.0	1.1	ND (0.50) J	0.170
MW-61-110	BR	13-May-15	3V	3.3	25.0	ND (2.5)	78.0	1.40
MW-62-065	BR	13-May-15	3V	1.4	13.0	3.1	ND (0.50)	4.20
		13-May-15 FD	3V	1.5	14.0	3.5	ND (0.50)	4.40
MW-62-110	BR	19-May-15	Flute	7.4	39.0	2.5	53.0	3.70

TABLE 3-2
Groundwater COPCs and In Situ Byproducts Sampling Results, Second Quarter 2015
Second 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-62-190	BR	19-May-15	Flute	3.8	68.0	ND (2.5)	490	ND (0.050)
MW-63-065	BR	29-Apr-15	3V	1.2	17.0	0.77	ND (0.50)	0.950
MW-64BR	BR	18-May-15	MD	6.0	70.0	ND (2.5)	1400	ND (0.050)
MW-65-160	SA	11-May-15	MD	0.62	26.0	7.6	ND (0.50)	12.0
		11-May-15 FD	MD	0.64	26.0	7.2	ND (0.50)	13.0
MW-65-225	DA	11-May-15	MD	2.9	49.0	ND (2.5)	ND (0.50)	2.20
MW-66-165	SA	13-May-15	MD	1.2	4.7	31.0	ND (0.50)	30.0
MW-66-230	DA	21-May-15	MD	6.3	80.0	12.0	ND (0.50)	14.0
MW-66BR-270	BR	18-May-15	3V	ND (0.10)	2.1	ND (0.50)	ND (0.50)	ND (0.050)
MW-67-185	SA	20-May-15	MD	1.2	11.0	300	ND (0.50)	54.0
MW-67-225	MA	20-May-15	MD	3.2	39.0	73.0	ND (0.50)	25.0
MW-67-260	DA	20-May-15	MD	8.2	89.0	ND (2.5)	23.0	0.640
MW-68-180	SA	18-May-15	MD	2.8	34.0	11.0	ND (0.50)	16.0
MW-68-240	DA	21-May-15	MD	1.8	24.0	4.3	ND (0.50)	4.60
MW-68BR-280	BR	27-May-15	3V	1.3	57.0	ND (2.5)	ND (0.50) J	0.0800
MW-69-195	BR	14-May-15	3V	2.3	85.0	10.0	ND (0.50)	18.0
		14-May-15 FD	3V	2.3	86.0	9.9	ND (0.50)	17.0
MW-70-105	BR	07-May-15	3V	4.3	79.0	3.3	89.0	3.90
MW-70BR-225	BR	27-May-15	3V	1.9	18.0	2.5	ND (0.50)	3.80
MW-71-035	SA	06-May-15	MD	10.0	78.0	ND (0.50)	3900	0.370
MW-72-080	BR	11-May-15	3V	11.0	75.0	ND (2.5)	ND (0.50)	0.790
MW-72BR-200	BR	04-May-15	3V	12.0	72.0	ND (2.5)	ND (0.50)	ND (0.11)
MW-73-080	BR	06-May-15	3V	1.5	25.0	3.9	ND (0.50)	4.10
MW-74-240	BR	14-May-15	3V	9.9	41.0	1.7	9.9	1.80
PE-1	DA	07-Apr-15	Tap	---	---	---	58.0	ND (0.050)
		05-May-15	Tap	---	---	---	57.0	ND (0.050)
		02-Jun-15	Tap	---	---	---	54.0	ND (0.050)
TW-1	SA-MA-DA	27-May-15	3V	---	15.0	14.0	---	19.0
TW-3D	DA	07-Apr-15	Tap	---	---	---	ND (0.50)	3.40
		05-May-15	Tap	---	---	---	ND (0.50)	3.20
		02-Jun-15	Tap	---	---	---	ND (0.50)	3.50

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.
MD = minimal drawdown.
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 (MD) 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, Second Quarter 2015
Second 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	06/09/2015	ND (0.20)	ND (1.0)	980	8.2 J
C-CON-S	06/10/2015	ND (0.20)	ND (1.0)	990	8.3 J
C-CON-D	06/10/2015	ND (0.20)	ND (1.0)	980	8.2 J
C-I-3-S	06/09/2015	ND (0.20)	ND (1.0)	980	8.2 J
C-I-3-D	06/09/2015	ND (0.20)	ND (1.0)	980	8.3 J
C-MAR-S	06/10/2015	ND (0.20)	ND (1.0)	1100	7.8 J
C-NR1-S	06/10/2015	ND (0.20)	ND (1.0)	990	8.3 J
C-NR1-D	06/10/2015	ND (0.20)	ND (1.0)	990	8.3 J
C-NR3-S	06/10/2015	ND (0.20)	ND (1.0)	1000	8.3 J
C-NR3-D	06/10/2015	ND (0.20)	ND (1.0)	1000	6.8 J
C-NR4-S	06/10/2015	ND (0.20)	ND (1.0)	1000	8.1 J
C-NR4-D	06/10/2015	ND (0.20)	ND (1.0)	1000	8.3 J
C-R22a-S	06/09/2015	ND (0.20)	ND (1.0)	990	8.2 J
C-R22a-D	06/09/2015	ND (0.20)	ND (1.0)	990	8.3 J
C-R27-S	06/09/2015	ND (0.20)	ND (1.0)	990	8.3 J
C-R27-D	06/09/2015	ND (0.20)	ND (1.0)	990	8.2 J
C-TAZ-S	06/09/2015	ND (0.20)	ND (1.0)	990	8.3 J
C-TAZ-D	06/09/2015	ND (0.20)	ND (1.0)	990	8.3 J
Shoreline Samples					
R-19	06/09/2015	ND (0.20)	ND (1.0)	1000	7.0 J
R-28	06/09/2015	ND (0.20)	ND (1.0)	990	8.3 J
R63	06/09/2015	ND (0.20)	ND (1.0)	990	8.2 J
RRB	06/10/2015	ND (0.20)	ND (1.0)	1000	8.0 J
Other Surface Water Monitoring Locations					
SW1	06/10/2015	ND (0.20)	ND (1.0)	1000	7.5 J
SW2	06/10/2015	ND (0.20)	ND (1.0)	1000	8.0 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, Second Quarter 2015
Second 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 µg/L	Barium, dissolved µg/L	Iron, Total µg/L	Iron, dissolved µg/L	Manganese, dissolved µg/L	Molybdenum, dissolved µg/L	Nitrate/Nitrite as Nitrogen mg/L	Selenium, dissolved µg/L	Total suspended solids mg/L
In-channel Locations										
C-BNS-D	06/09/2015	2.4	140	ND (20.0)	ND (20.0)	ND (0.50)	4.8	0.390	1.4	ND (10.0)
C-CON-S	06/10/2015	2.2	150	ND (20.0)	ND (20.0)	ND (0.50)	4.3	0.390	1.2	ND (10.0)
C-CON-D	06/10/2015	2.3	120	21.0	ND (20.0)	ND (0.50)	4.5	0.390	1.6	ND (10.0)
C-I-3-S	06/09/2015	2.3	130	ND (20.0)	ND (20.0)	ND (0.50)	4.8	0.370	1.4	ND (10.0)
C-I-3-D	06/09/2015	2.4	130	ND (20.0)	ND (20.0)	ND (0.50)	5.0	0.390	1.4	ND (10.0)
C-MAR-S	06/10/2015	2.8	130	1800	250	51.0	4.6	0.310	1.4	53.0
C-NR1-S	06/10/2015	2.2	120	ND (20.0)	ND (20.0)	ND (0.50)	4.4	0.390	1.5	ND (10.0)
C-NR1-D	06/10/2015	2.4	130	21.0	ND (20.0)	ND (0.50)	4.6	0.390	1.5	ND (10.0)
C-NR3-S	06/10/2015	2.2	130	ND (20.0)	ND (20.0)	ND (0.50)	4.6	0.400	1.6	ND (10.0)
C-NR3-D	06/10/2015	2.2	120	ND (20.0)	ND (20.0)	ND (0.50)	4.5	0.380	1.6	ND (10.0)
C-NR4-S	06/10/2015	2.4	130	ND (20.0)	ND (20.0)	ND (0.50)	4.5	0.380	1.6	ND (10.0)
C-NR4-D	06/10/2015	2.3	120	ND (20.0)	ND (20.0)	ND (0.50)	4.3	0.380	1.2	ND (10.0)
C-R22a-S	06/09/2015	2.4	130	ND (20.0)	ND (20.0)	ND (0.50)	5.0	0.400	1.6	ND (10.0)
C-R22a-D	06/09/2015	2.2	120	ND (20.0)	ND (20.0)	ND (0.50)	4.6	0.360	1.4	ND (10.0)
C-R27-S	06/09/2015	2.5	130	ND (20.0)	ND (20.0)	ND (0.50)	5.1	0.380	1.6	ND (10.0)
C-R27-D	06/09/2015	2.4	130	21.0	ND (20.0)	ND (0.50)	4.9	0.400	1.4	ND (10.0)
C-TAZ-S	06/09/2015	2.4	130	ND (20.0)	ND (20.0)	ND (0.50)	4.9	0.390	1.7	ND (10.0)
C-TAZ-D	06/09/2015	2.4	130	ND (20.0)	ND (20.0)	ND (0.50)	4.8	0.400	1.6	ND (10.0)
Shoreline Samples										
R-19	06/09/2015	2.3	130	29.0	ND (20.0)	ND (0.50)	4.7	0.480	1.2	ND (10.0)
R-28	06/09/2015	2.4	140	23.0	ND (20.0)	ND (0.50)	5.0	0.370	1.5	ND (10.0)
R63	06/09/2015	2.3	130	39.0	ND (20.0)	ND (0.50)	4.9	0.470	1.3	ND (10.0)
RRB	06/10/2015	2.6	120	320	ND (20.0)	8.5	4.6	0.240	1.4	15.0

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, Second Quarter 2015
Second 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	April 2015		May 2015		June 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	0.02	853	0.00	0	0.01	853
TW-03D	91.89	3,969,631	95.54	4,265,034	105.53	4,558,810	97.65	12,793,475
PE-01	25.11	1,084,647	24.12	1,076,649	27.71	1,197,206	25.65	3,358,502
TOTAL	**117.0**	**5,054,278**	**119.7**	**5,342,536**	**133.2**	**5,756,016**	**123.3**	**16,152,830**

Chromium Removed This Quarter (kg)	33.5
Chromium Removed Project to Date (kg)	3760
Chromium Removed This Quarter (lb)	73.9
Chromium Removed Project to Date (lb)	8280

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 March 1, 2015 through May 31, 2015. DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from March 1, 2015 through May 31, 2015.

TABLE 4-2
Analytical Results for Extraction Wells, April 2014 through June 2015
Second 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	Chromium, dissolved (µg/L)	Hexavalent Chromium (µg/L)	Total dissolved solids (mg/L)	pH (PHUNITS)	Alkalinity, bicarbonate as CaCO3 (mg/L)	Alkalinity, carbonate as CaCO3 (mg/L)	Alkalinity, hydroxide (mg/L)	Alkalinity, total as CaCO3 (mg/L)	Calcium, dissolved (µg/L)	Chloride (mg/L)	Iron, dissolved (µg/L)	Magnesium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Nitrate as Nitrogen (mg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sodium, dissolved (µg/L)	Specific conductance (µS/cm)	Sulfate (mg/L)
TW-3D	04-Mar-14	752 LF	816 LF	5,050	7.5 J	150	ND (5.00)	---	150	234,000 LF	2,560	ND (20.0) LF	39,200 LF	8.7 LF	3.69	---	1,490,000 LF	7,980	558
	08-Apr-14	772 LF	662 LF	5,210	7.4 J	145	ND (5.00)	---	145	235,000 LF	2,440	ND (20.0) LF	35,700 LF	7.0 LF	3.27	---	1,490,000 LF	7,810	528
	06-May-14	742 LF	601 LF	4,820	7.3 J	77.0	ND (5.00)	---	77.0	236,000 LF	2,520	ND (20.0) LF	30,400 LF	8.9 LF	3.33	---	1,480,000 LF	8,270	541
	03-Jun-14	737 LF	725 LF	4,750	7.4 J	134 J	ND (5.00) J	---	134 J	212,000 LF	2,360	136 LF	31,700 LF	7.9 LF	3.28	---	1,540,000 LF	8,090	535
	01-Jul-14	736 LF	720 LF	4,970	7.3 J	136	ND (5.00)	---	136	198,000 LF	2,410	ND (20.0) LF	30,000 LF	7.1 LF	3.44	---	1,570,000 LF	8,180	531
	05-Aug-14	695 LF	704 LF	4,830	7.4 J	154	ND (5.00)	---	154	213,000 LF	2,370	ND (20.0) LF	30,600 LF	7.5 LF	3.42	---	1,620,000 LF	8,020	536
	02-Sep-14	729 LF	703 LF	5,150	7.4 J	134	ND (5.00)	---	134	211,000 LF	2,360	ND (20.0) LF	28,300 LF	7.1 LF	3.26	---	1,640,000 LF	8,070	525
	07-Oct-14	733 LF	720 LF	5,000	7.4 J	136	ND (5.00)	---	136	215,000 LF	2,340	ND (20.0) LF	33,000 LF	8.6 LF	3.29	---	1,510,000 LF	7,910	540
	04-Nov-14	706 LF	711 LF	4,980	7.5 J	157	ND (5.00)	---	157	208,000 LF	2,440	ND (20.0) LF	31,400 LF	8.6 LF	2.84	---	1,350,000 LF	7,990	478
	02-Dec-14	757 LF	733 LF	4,810	7.6 J	143	ND (5.00)	---	143	212,000 LF	2,440	ND (20.0) LF	34,600 LF	9.4 LF	3.26	---	1,580,000 LF	8,110	547
	06-Jan-15	790 LF	790 LF	4,800	7.5 J	140	ND (5.00)	ND (5.00)	140	240,000 LF	2,400	ND (20.0) LF	29,000 LF	ND (0.50) J LF	3.00	---	1,500,000 LF	8,400	510
	03-Feb-15	760 FF	790 FF	4,800	7.5 J	140	ND (5.00)	ND (5.00)	140	210,000 FF	2,300	ND (20.0) FF	37,000 FF	ND (0.50) FF	3.10	---	1,600,000 FF	7,300	510
	17-Mar-15	690 LF	740 LF	4,900	7.7 J	140	ND (5.00)	ND (5.00)	140	230,000 LF	2,200	ND (20.0) LF	34,000 LF	ND (0.50) LF	---	3.60	1,500,000 LF	7,800	520
	07-Apr-15	730 LF	730 LF	4,700	7.5 J	140	ND (5.00)	ND (5.00)	140	230,000 LF	2,400	ND (20.0) LF	31,000 LF	ND (0.50) LF	---	3.40	1,600,000 LF	8,400	530
	05-May-15	640 LF	700 LF	4,400	7.1 J	170 J	ND (5.00) J	ND (5.00) J	170 J	250,000 LF	2,100	ND (20.0) LF	29,000 LF	ND (0.50) LF	---	3.20	1,500,000 LF	7,500	470
	02-Jun-15	650 LF	700 LF	4,400	---	140	ND (5.00)	ND (5.00)	140	230,000 LF	2,000	ND (20.0) LF	28,000 LF	ND (0.50) LF	---	3.50	1,400,000 LF	7,700	470
PE-1	04-Mar-14	4.8 LF	4.8 LF	2,510	7.5 J	215	ND (5.00)	---	215	106,000 LF	1,090	ND (20.0) LF	24,800 LF	56.0 LF	ND (0.500)	---	773,000 LF	3,680	391
	08-Apr-14	4.2 LF	4.0 LF	2,700	7.5 J	218	ND (5.00)	---	218	119,000 LF	1,050	ND (20.0) LF	24,200 LF	66.3 LF	ND (0.500)	---	817,000 LF	4,150	376
	06-May-14	4.3 LF	3.9 LF	2,680	7.4 J	178	ND (5.00)	---	178	126,000 LF	1,170	ND (20.0) LF	23,400 LF	72.2 LF	ND (0.500)	---	802,000 LF	4,540	395
	03-Jun-14	4.1 LF	3.7 LF	2,610	7.5 J	224	ND (5.00)	---	224	110,000 LF	1,140	127 LF	24,000 LF	68.7 LF	ND (0.500)	---	762,000 LF	4,480	396
	01-Jul-14	3.7 LF	3.6 LF	2,500	7.6 J	237	ND (5.00)	---	237	106,000 LF	1,060	ND (20.0) LF	22,700 LF	62.2 LF	ND (0.500)	---	805,000 LF	4,420	379
	05-Aug-14	3.9 LF	3.7 LF	2,560	7.6 J	221	ND (5.00)	---	221	112,000 LF	1,030	ND (20.0) LF	24,400 LF	62.0 LF	ND (0.500)	---	786,000 LF	4,320	385
	02-Sep-14	4.0 LF	3.8 LF	2,610	7.5 J	215	ND (5.00)	---	215	104,000 LF	1,140	ND (20.0) LF	21,000 LF	61.6 LF	ND (0.500)	---	848,000 LF	4,260	387
	07-Oct-14	4.2 LF	3.7 LF	2,580	7.6 J	216	ND (5.00)	---	216	110,000 LF	962	28.5 LF	23,500 LF	61.7 LF	ND (0.500)	---	772,000 LF	4,160	391
	04-Nov-14	4.7 LF	4.0 LF	2,500	7.6 J	220	ND (5.00)	---	220	101,000 LF	970	ND (20.0) LF	24,000 LF	67.6 LF	ND (0.500)	---	723,000 LF	4,230	387
	02-Dec-14	4.9 LF	4.2 LF	2,560	7.6 J	227	ND (5.00)	---	227	108,000 LF	1,040	34.0 LF	24,700 LF	68.4 LF	ND (0.500)	---	794,000 LF	4,230	385
	06-Jan-15	4.2 LF	5.1 LF	2,400	7.6 J	220	ND (5.00)	ND (5.00)	220	110,000 LF	1,000	ND (20.0) LF	21,000 LF	33.0 LF	ND (0.0500)	---	810,000 LF	4,300	360
	03-Feb-15	3.8 FF	4.7 FF	2,500	7.7 J	220	ND (5.00)	ND (5.00)	220	98,000 FF	1,000	ND (20.0) FF	24,000 FF	36.0 FF	ND (0.0500)	---	810,000 FF	3,900	370
	17-Mar-15	3.4 LF	4.0 LF	2,500	7.7 J	220	ND (5.00)	ND (5.00)	220	100,000 LF	970	ND (20.0) LF	23,000 LF	46.0 LF	---	ND (0.0500)	750,000 LF	3,700	360
	07-Apr-15	3.6 LF	3.6 LF	2,500	7.6 J	220	ND (5.00)	ND (5.00)	220	110,000 LF	1,000	ND (20.0) LF	23,000 LF	58.0 LF	---	ND (0.0500)	790,000 LF	4,200	360
	05-May-15	2.5 LF	2.9 LF	2,500	7.6 J	210 J	ND (5.00) J	ND (5.00) J	210 J	120,000 LF	1,000	ND (20.0) LF	24,000 LF	57.0 LF	---	ND (0.0500)	850,000 LF	4,200	350
	02-Jun-15	3.1 LF	3.4 LF	2,400	---	200	ND (5.00)	ND (5.00)	200	120,000 LF	980	ND (20.0) LF	23,000 LF	54.0 LF	---	ND (0.0500)	780,000 LF	4,200	340

Notes:

-- = not collected or not available.
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.
µs/cm = microsiemens per centimeter.

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, Second Quarter 2015

Second 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	April	0.0055	NA
	May	0.0054	NA
	June	0.0061	NA
Northern Gradient Pair MW-31-135 / MW-33-150	April	0.0020	30 / 30
	May	0.0018	31 / 31
	June	0.0023	30 / 30
Central Gradient Pair MW-45-95 / MW-34-100	April	0.0102	30 / 30
	May	0.0107	31 / 31
	June	0.0119	30 / 30
Southern Gradient Pair MW-45-95 / MW-27-85	April	0.0044	30 / 30
	May	0.0038	31 / 31
	June	0.0041	30 / 30

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
Second 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 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	17,170	830	457.1	456.82	-0.3
May 2015	16,000	13,890	2,110	456.5	456.06	-0.5
June 2015	14,500	13,616	884	456.1	455.94	-0.2
July 2015	13,400			455.6		

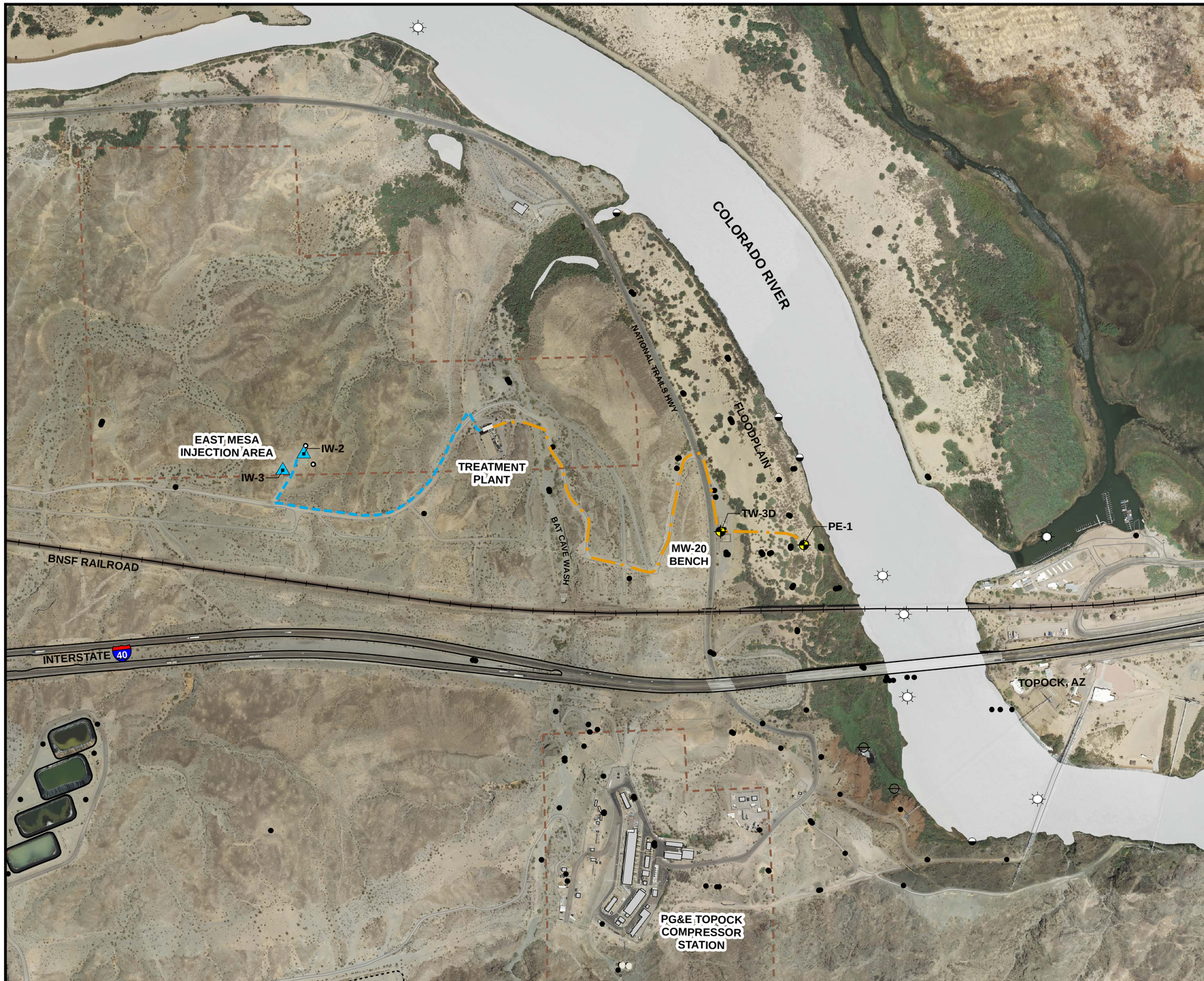
NOTES:
cfs = cubic feet per second; ft amsl = feet above mean sea level.
NA = Data unavailable during this time period.

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 July 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 2014 please see: *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 (CH2MHILL, 2015)

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

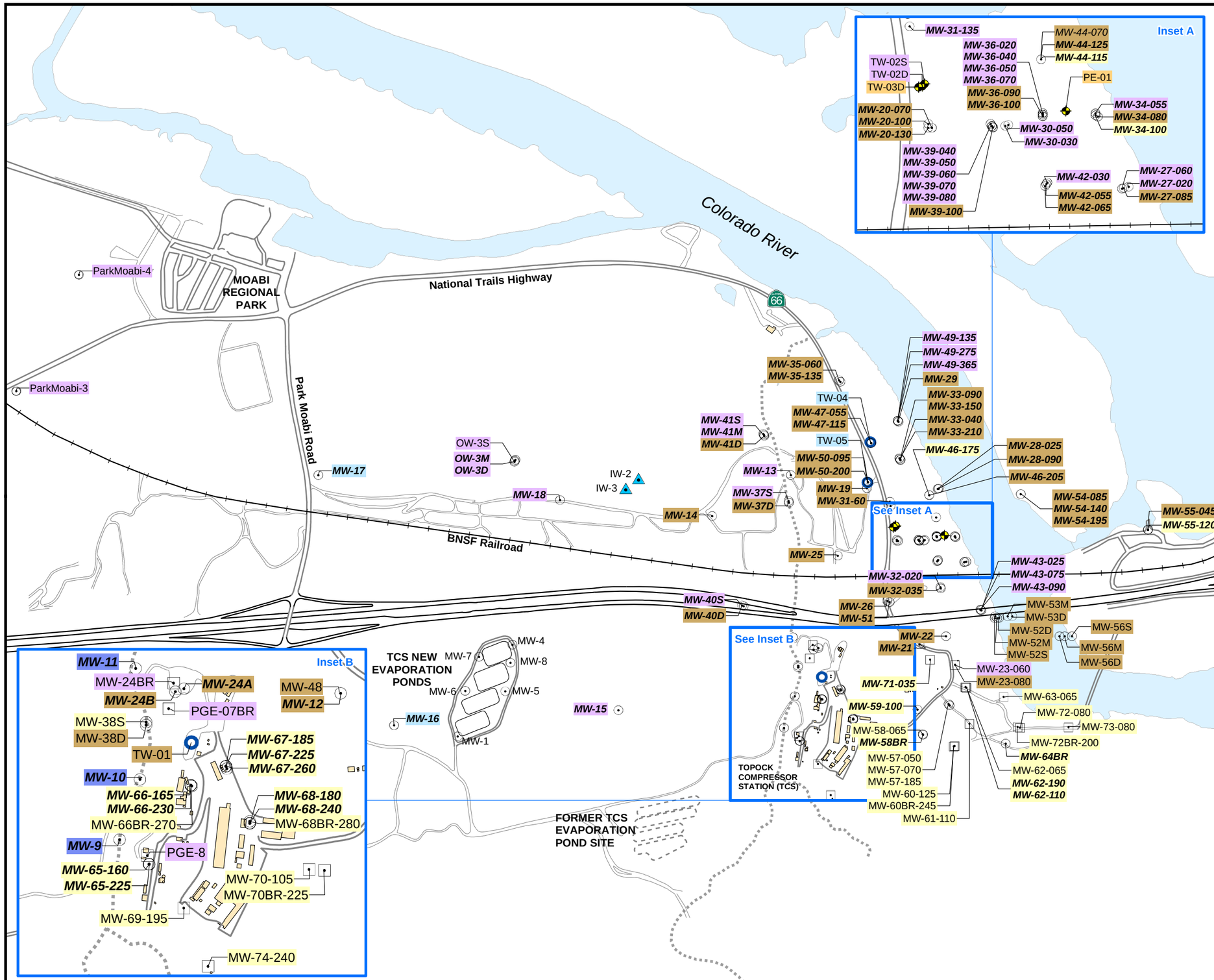
0 600 1,200 Feet

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

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

CH2MHILL

BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE1-1_IM3_GMP_LOCS_2015Q2.MXD MSCHROCK 7/15/2015 1:11:25 AM



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 minimal drawdown sampling method; otherwise, sample collected using the method indicated on Table 3-1.

N

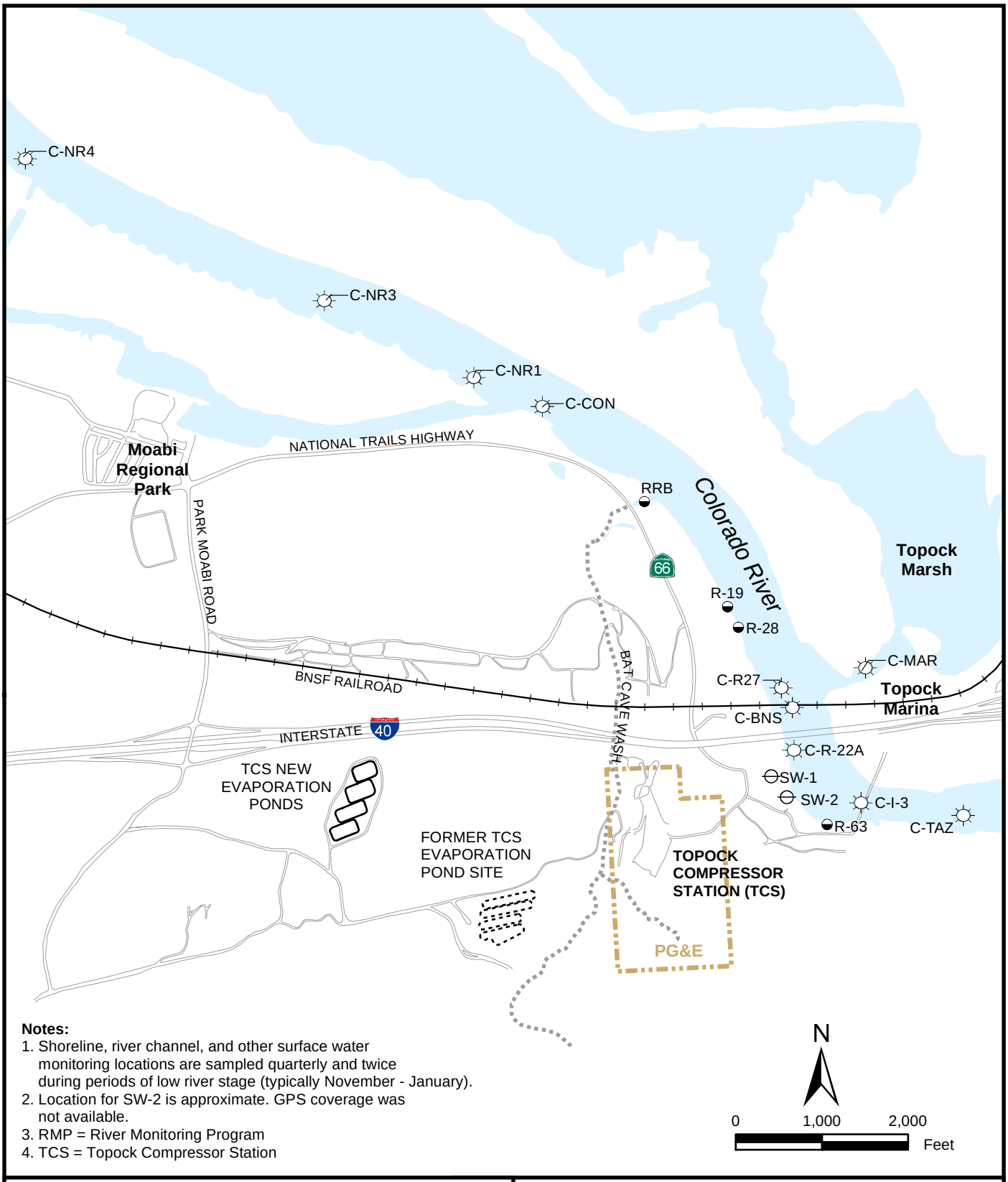
0 500 1,000 Feet

California State Plane NAD83 Zone 5 US Feet

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

CH2MHILL

Path: G:\PacificGasElectricCo\TopockProgram\GIS\MapFiles\2015\GMP-IMP\2015Q2\Figure1-2_GMP_Sampling_Frequency_2015Q2.mxd Date Saved: 7/31/2015 1:01:45 PM



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

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

CH2MHILL

BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE1-3_GMP_RIVER_SWLOCS_2015Q2.MXD MSCHROCK 7/15/2015 1:07:40 AM

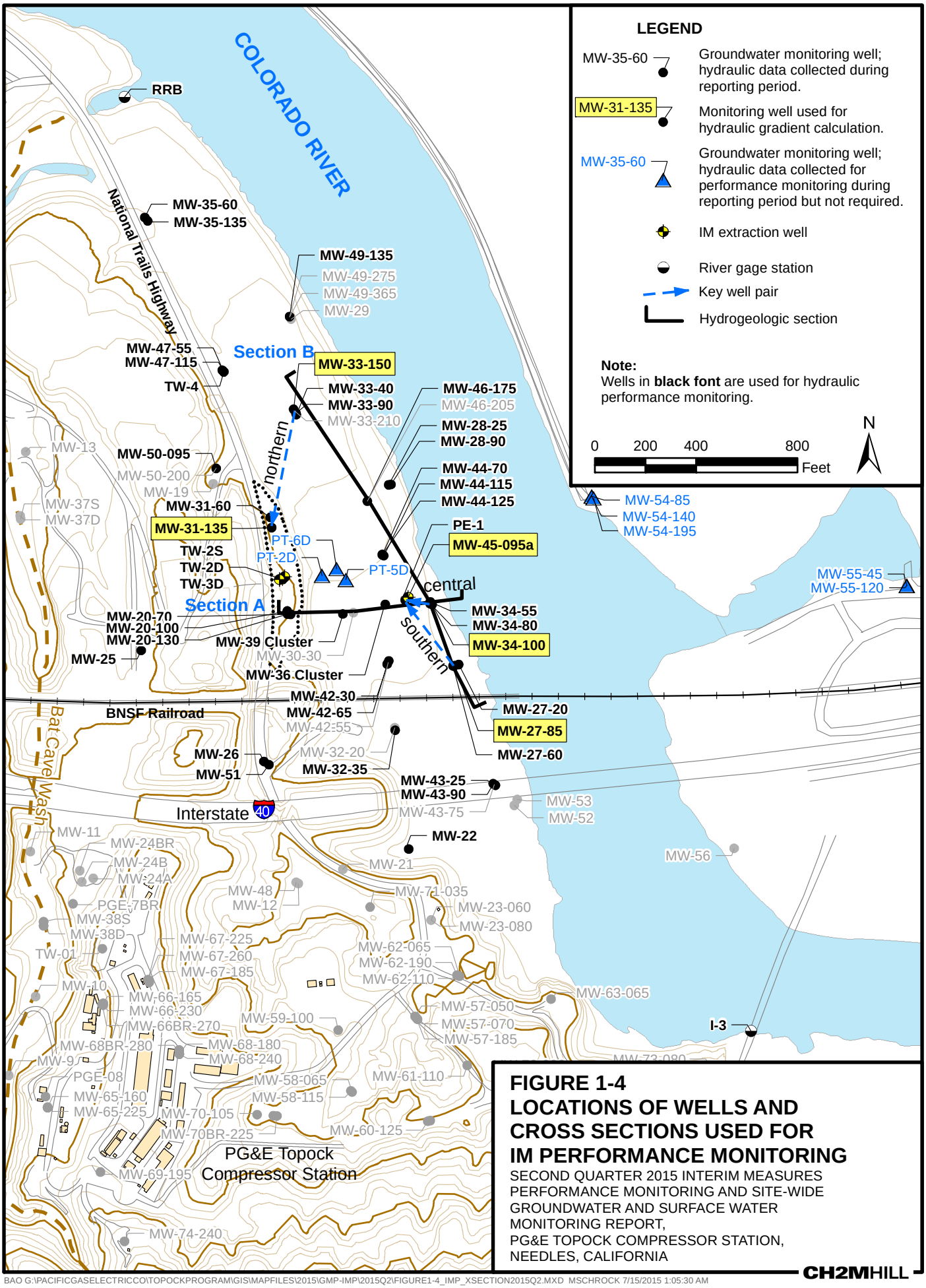
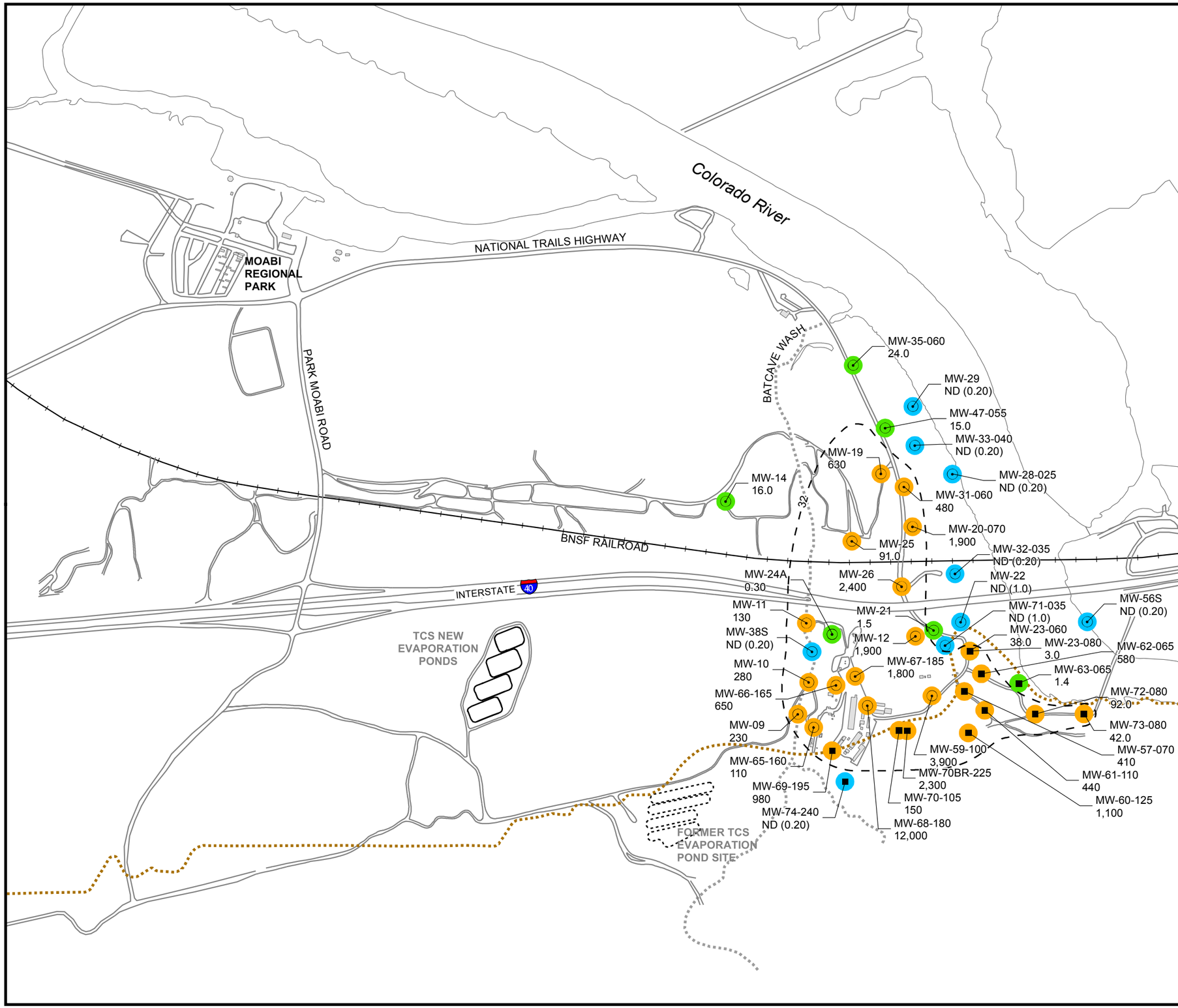


FIGURE 1-4
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING

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

CH2MHILL

BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE1-4_IMP_XSECTION2015Q2.MXD MSCHROCK 7/15/2015 1:05:30 AM



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 – Second Quarter 2015

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

Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Second 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

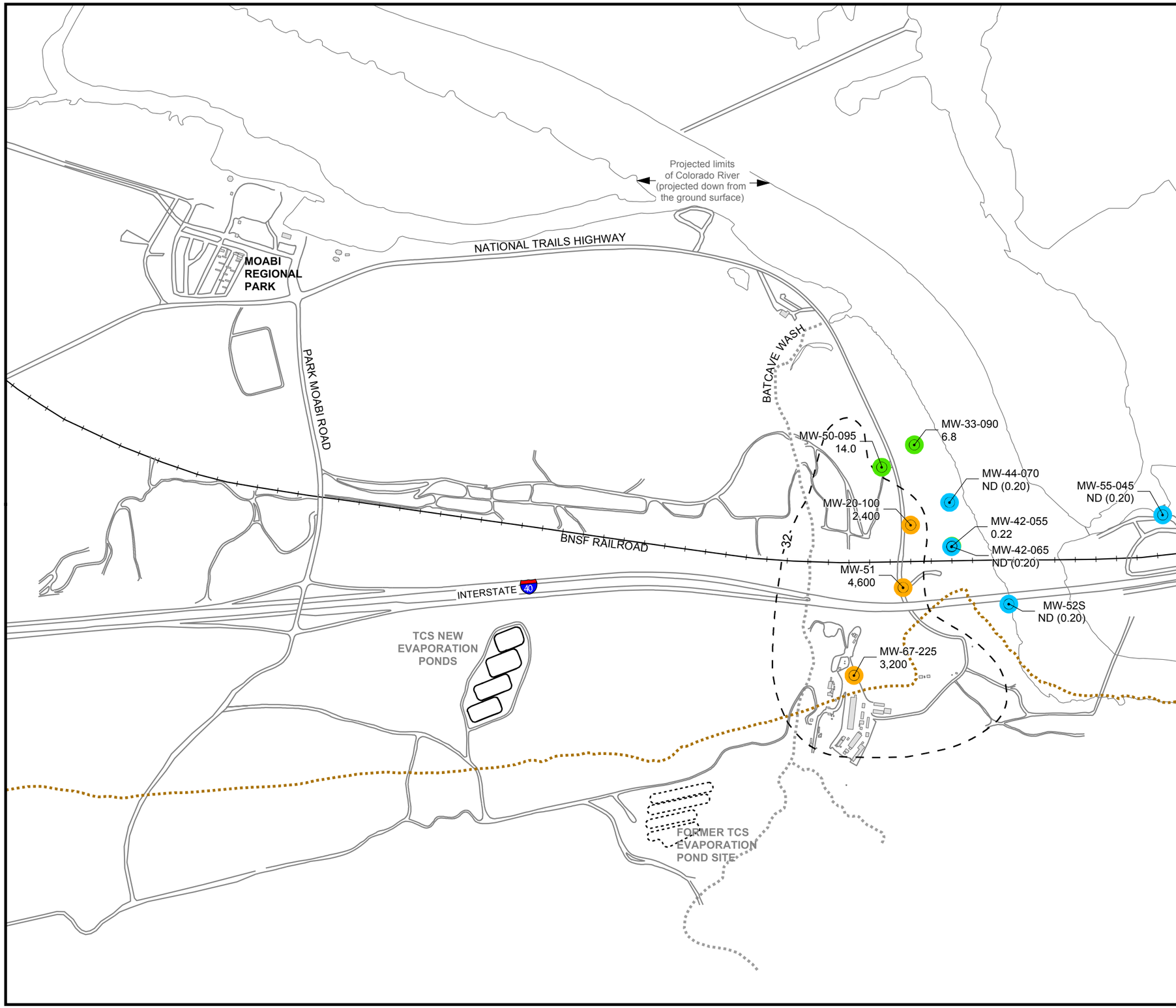
0 500 1,000 Feet

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

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

CH2MHILL

BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE3-1A_IMP_CR6_2015Q2_SHALLOW.MXD MSCHROCK 7/21/2015 9:41:39 AM



LEGEND

Alluvial Aquifer 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 **Mid-Depth zone** of Alluvial Aquifer and Bedrock.

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

Cr(VI) Concentrations – Second 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 Second Quarter 2015 groundwater sampling results.

Approximate bedrock contact at 425 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.

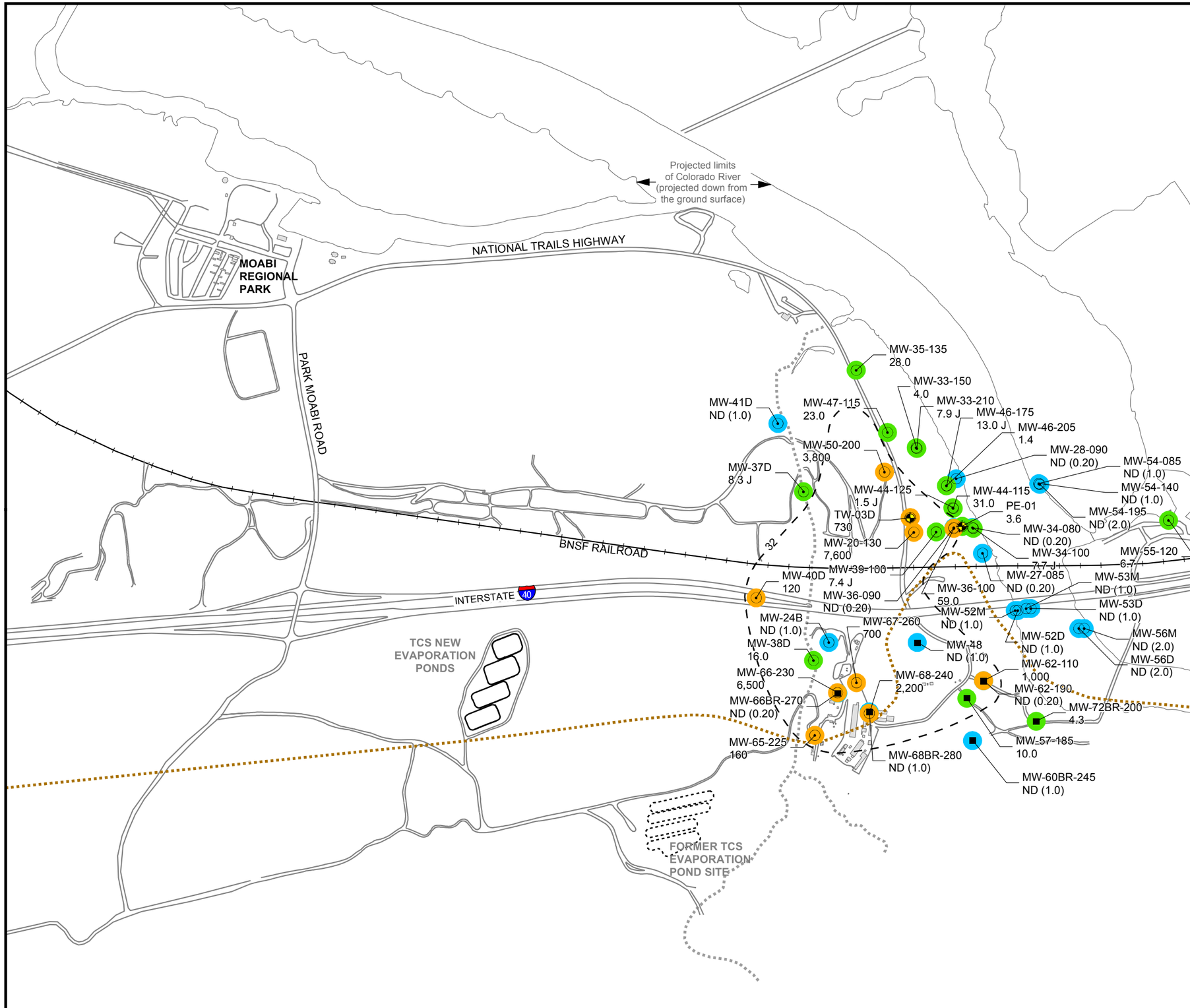
N

0 500 1,000 Feet

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

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

CH2MHILL



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 – Second 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 Second 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

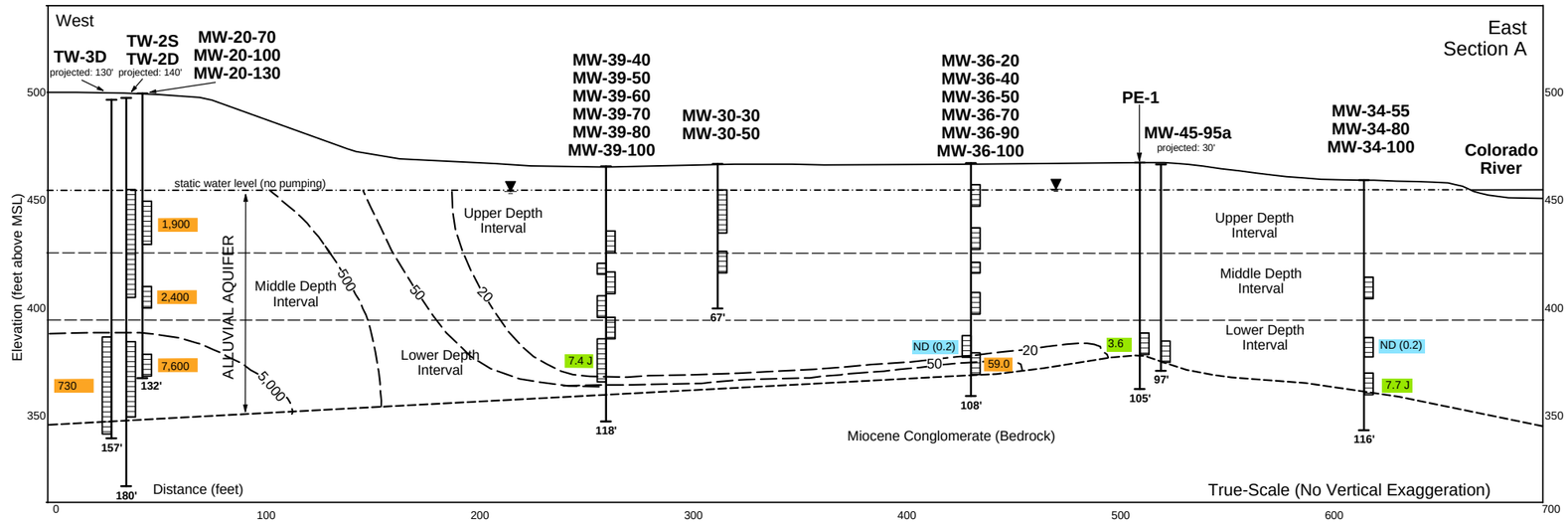
0 500 1,000 Feet

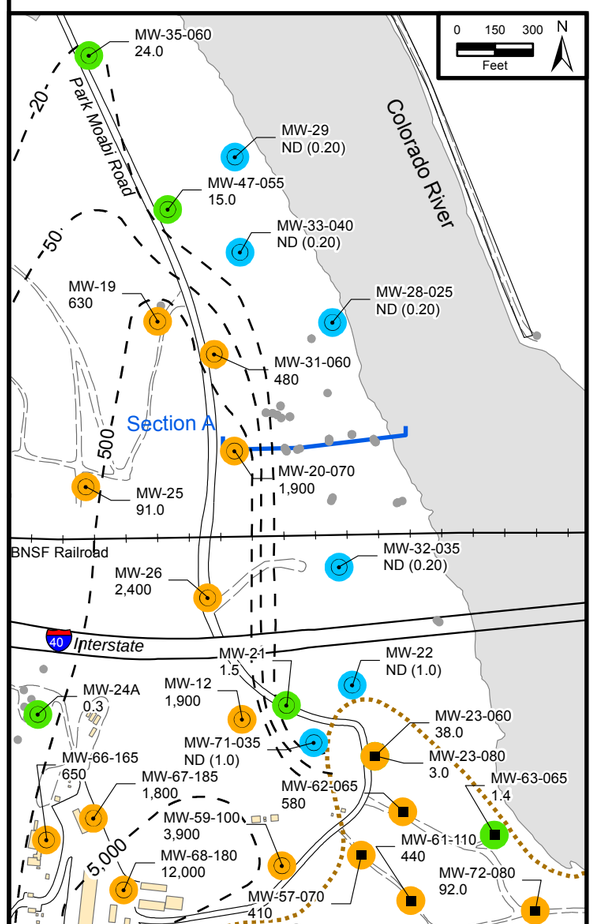
FIGURE 3-1c
Cr(VI) SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK, SECOND QUARTER 2015

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

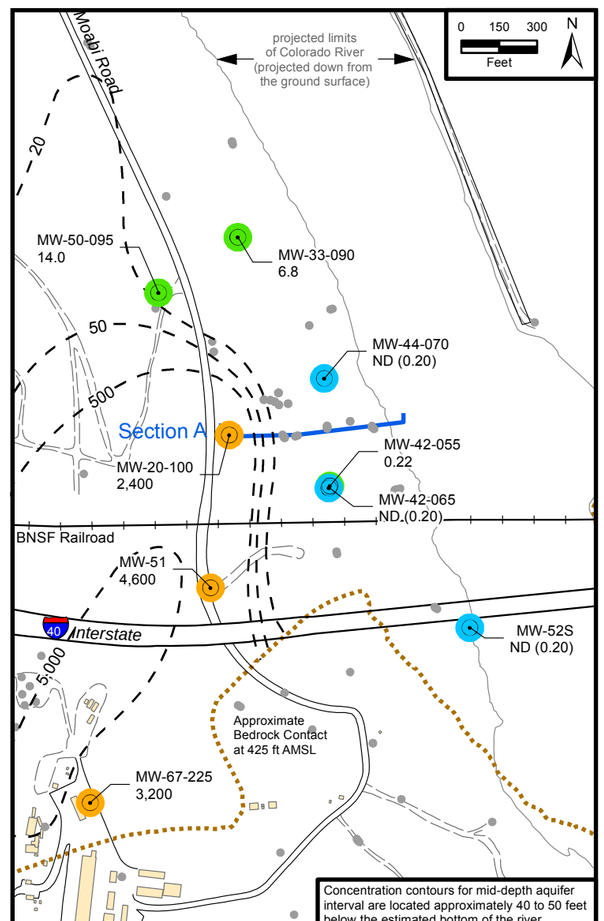
CH2MHILL

BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE3-1C_IMP_CR6_2015Q2_DEEP.MXD MSCHROCK 7/21/2015 10:23:42 AM

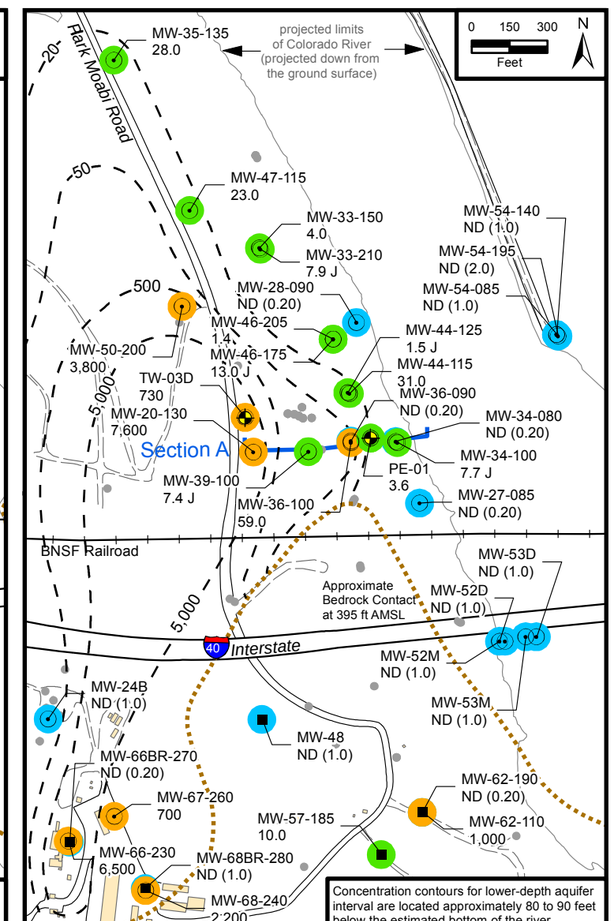




Shallow Wells (Upper-Depth Interval)



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 - Second 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 Second Quarter 2015 groundwater sampling results.

- Hydrogeologic Section A
- Approximate bedrock contact

Notes:

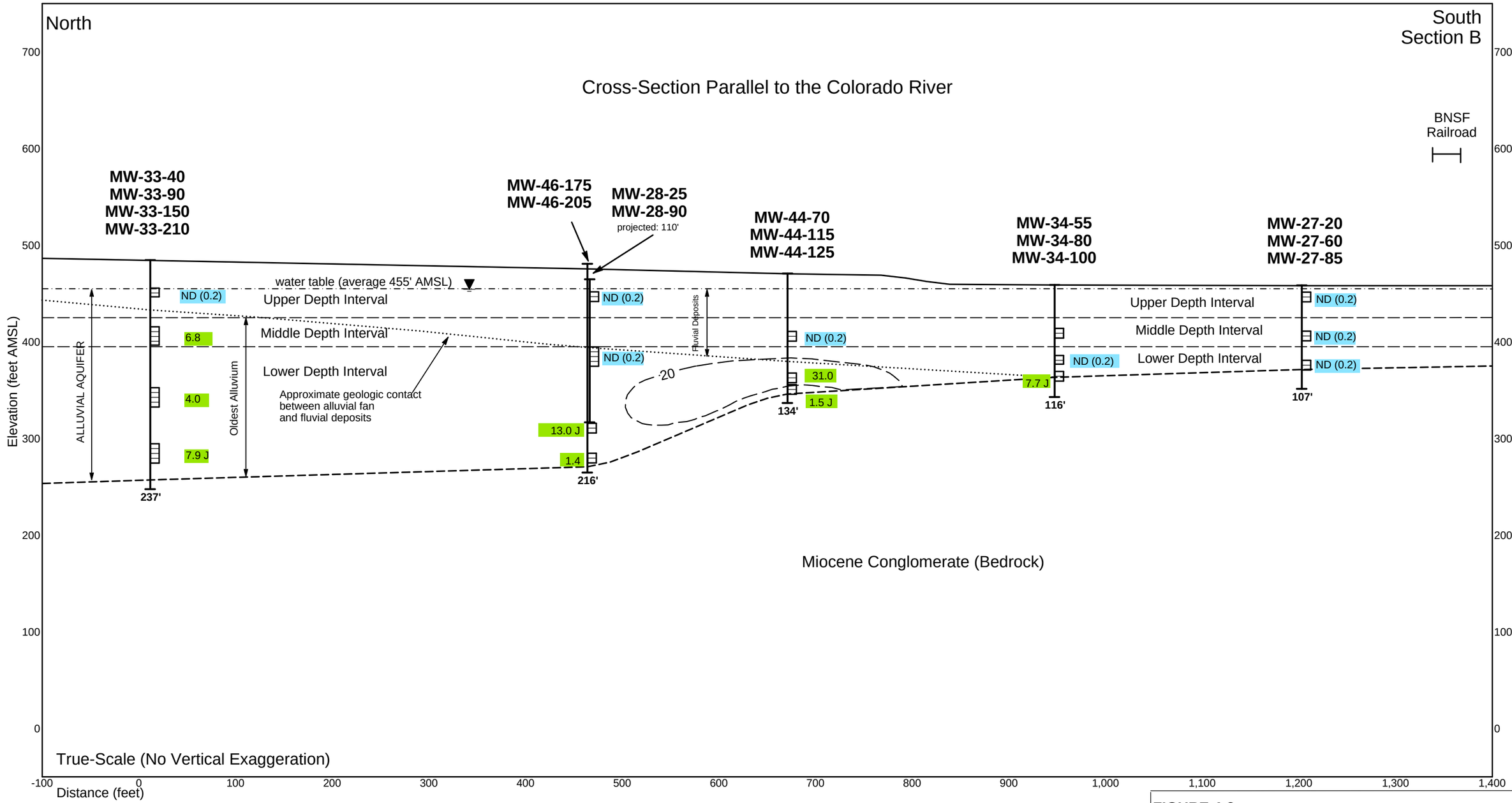
1. The Cr(VI) concentration contours of 20 and 50 µg/L are shown in accordance with DTSC's 2005 IM performance monitoring directive. The IM performance standard was established for containment of Cr(VI) concentrations greater than 20 µg/L in the floodplain portion of the Alluvial Aquifer.
2. Active Extraction 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, SECOND QUARTER 2015

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

CH2MHILL

BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE4-1_IMP_CR6_PPB_2015Q2_MAX.MXD MSCHROCK 7/31/2015 1:28:02 PM



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 Second Quarter 2015.

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

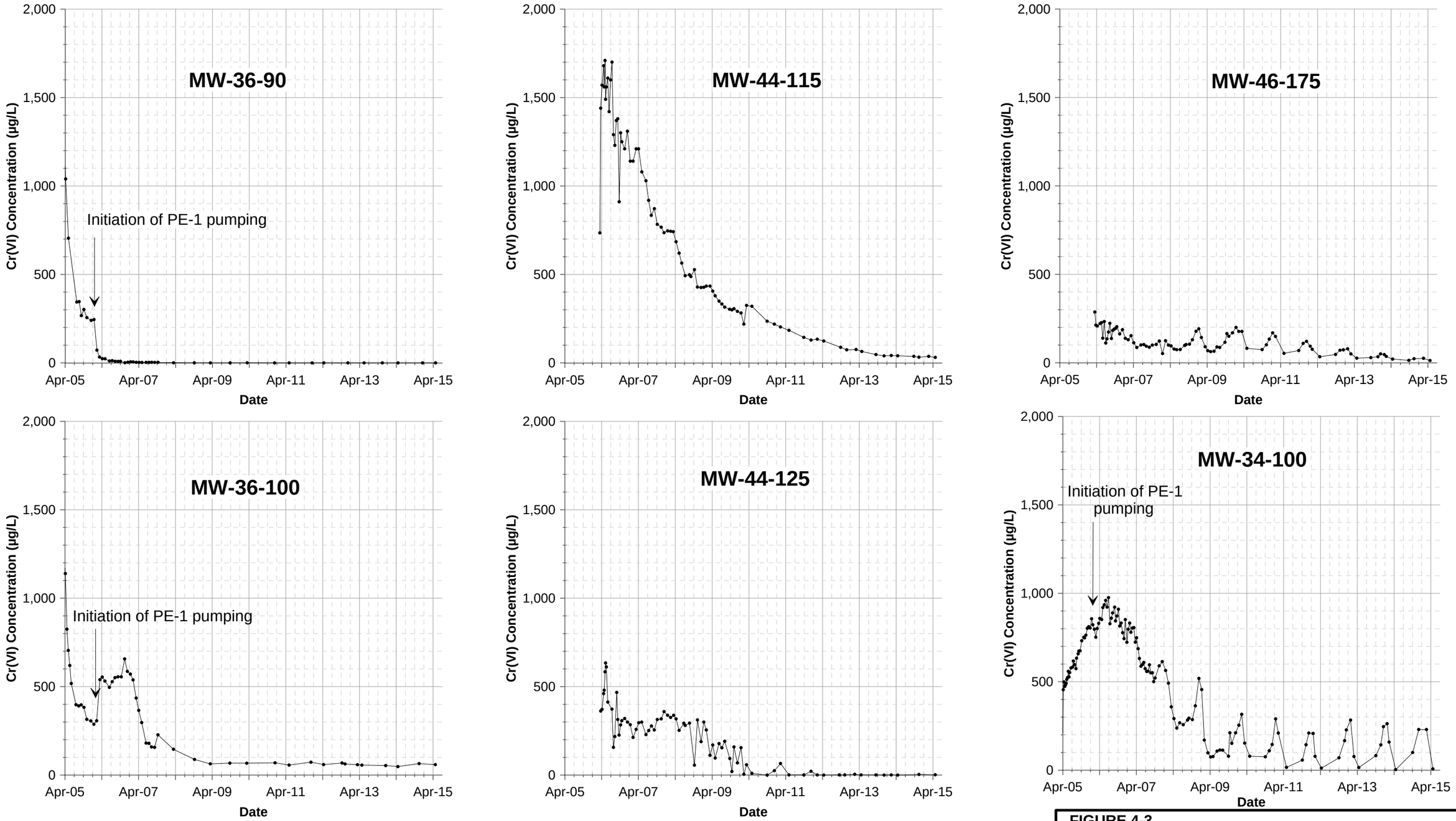
ND (0.2)	Not detected at listed reporting limit
24.2	Concentration between reporting limit and 32 µg/L
203	Concentration greater than or equal to 32 µg/L

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

SECOND 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_2Q\FIGURE4-2_XSECB_CR.GDW;



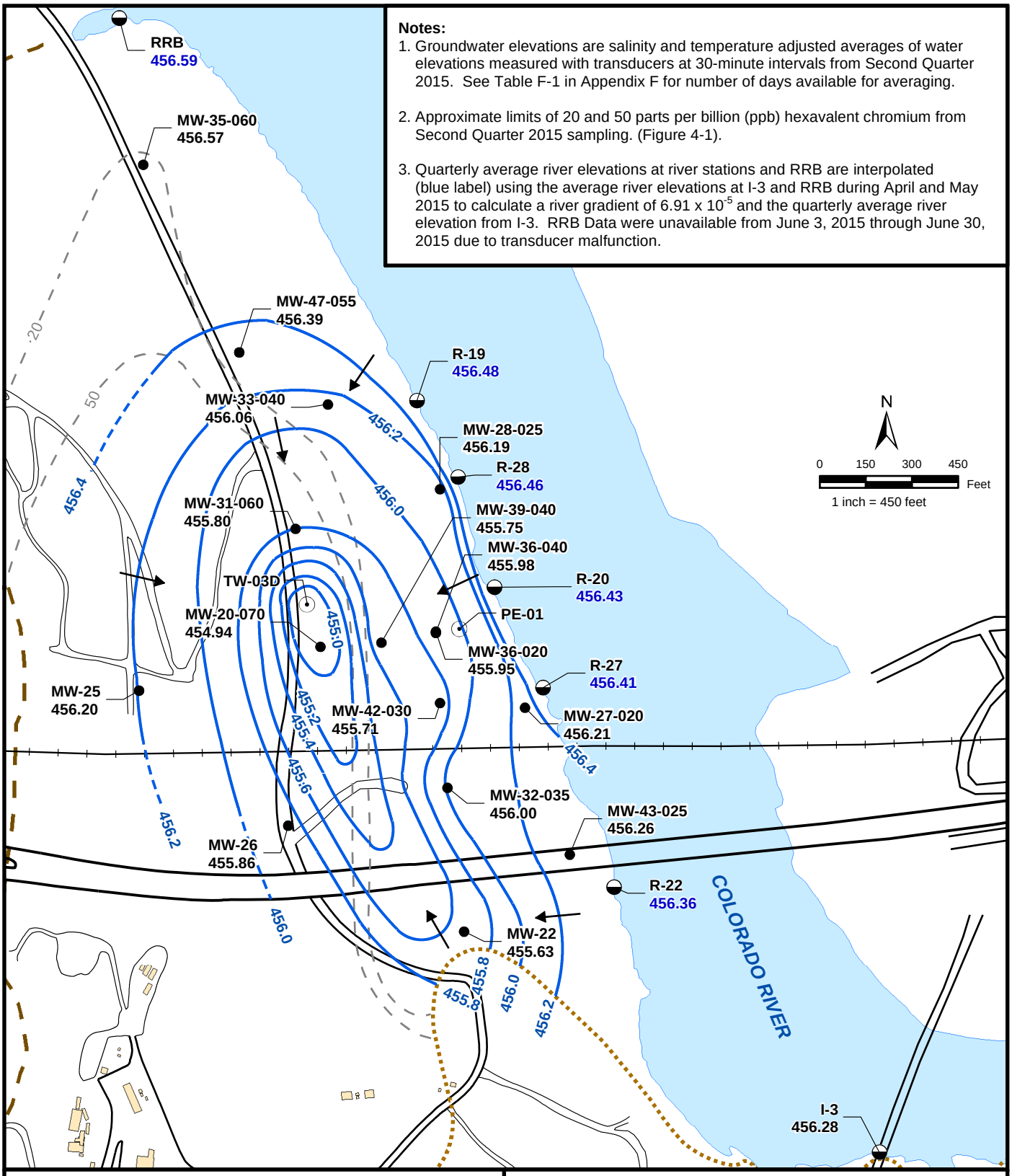
Notes:

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 JUNE 2015

SECOND 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. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from Second 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 Second Quarter 2015 sampling. (Figure 4-1).

3. Quarterly average river elevations at river stations and RRB are interpolated (blue label) using the average river elevations at I-3 and RRB during April and May 2015 to calculate a river gradient of 6.91 x 10^{-5} and the quarterly average river elevation from I-3. RRB Data were unavailable from June 3, 2015 through June 30, 2015 due to transducer malfunction.

MW-29 455.85	Average Groundwater Elevation at Monitoring Station (ft AMSL)		Monitoring Well
R-22 454.84	River Elevation (ft MSL) Interpolated Average		River Station
	Bedrock Contact at 455 ft elevation		Extraction Well
	Interpreted Groundwater Flow Direction		
	Groundwater Elevation Contour 0.2 ft (dashed where inferred)		
	Inferred Cr(VI) Concentration Contour		

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

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

CH2MHILL

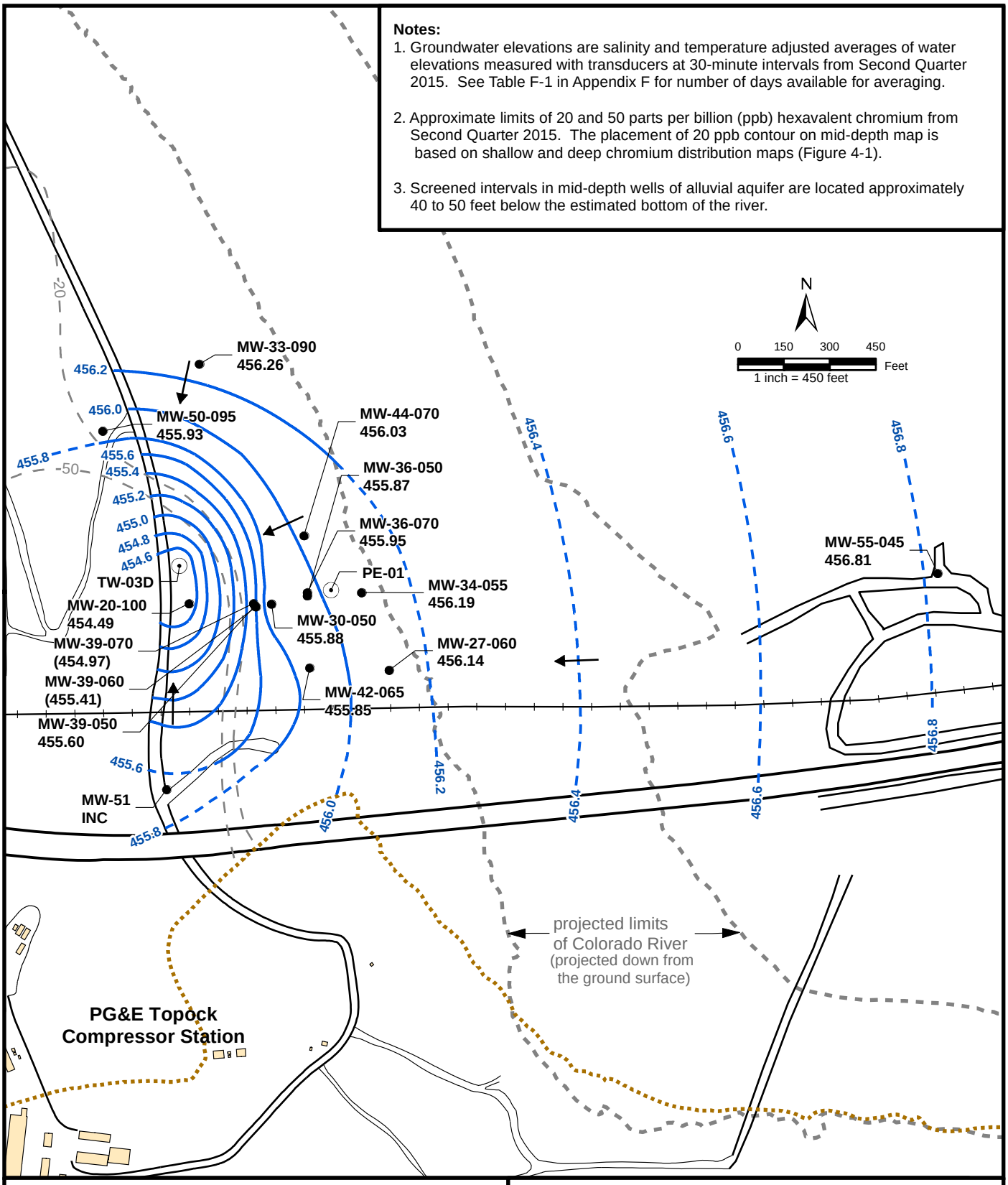
BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE4-4A_PMR_GWE_2015Q2_SHALLOW.MXD MSCHROCK 7/31/2015 1:51:22 PM

Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from Second 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 Second 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

Inferred Cr(VI) Concentration Contour

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, SECOND QUARTER 2015

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

CH2MHILL

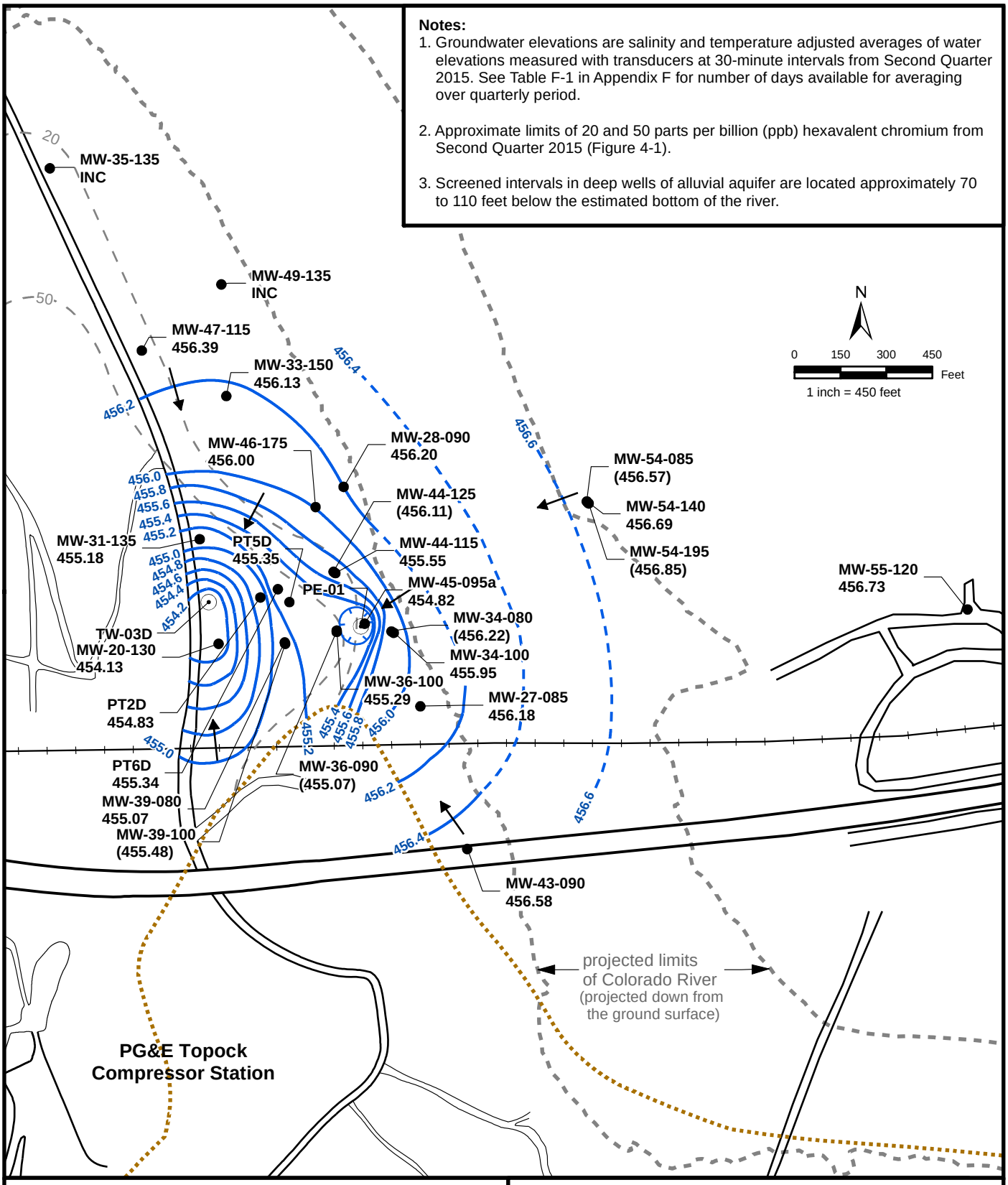
BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE4-4B_PMR_GWE_2015Q2_MID.MXD MSCHROCK 7/31/2015 1:59:39 PM

Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from Second 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 Second Quarter 2015 (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.



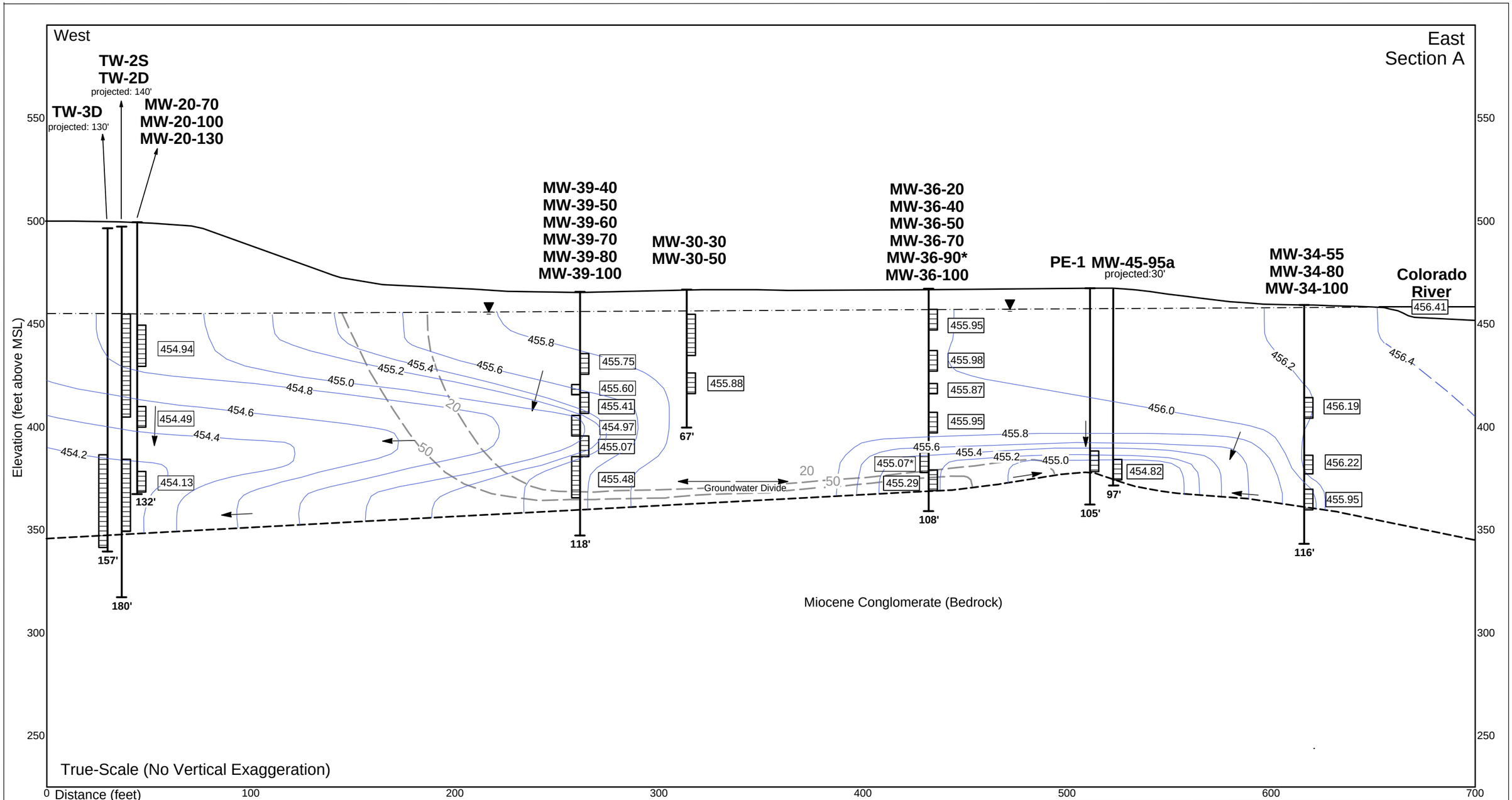
MW-29 455.85 — Average Groundwater Elevation at Monitoring Station (ft AMSL)	Monitoring Well
MW-29 (455.85) — Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring	Extraction Well
INC — Data Incomplete for Reporting Period	Groundwater Elevation Contour 0.2 ft (dashed where inferred)
Bedrock Contact at 395 ft AMSL elevation	Interpreted Groundwater Flow Direction
Inferred Cr(VI) Concentration Contour	

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

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

CH2MHILL

BAO G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2015\GMP-IMP\2015Q2\FIGURE4-4C_PMR_GWE_2015Q2_DEEP.MXD MSCHROCK 7/31/2015 1:39:46 PM



Notes:
Results show average groundwater elevations for April 1, 2015 through June 30, 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 — Average groundwater head (ft AMSL); 103 — boring depth (feet)

20 — Inferred hexavalent chromium contour (ppb) in Alluvial Aquifer from Second Quarter 2015.

453.5 — Groundwater head contour

453.5 — Inferred groundwater head contour

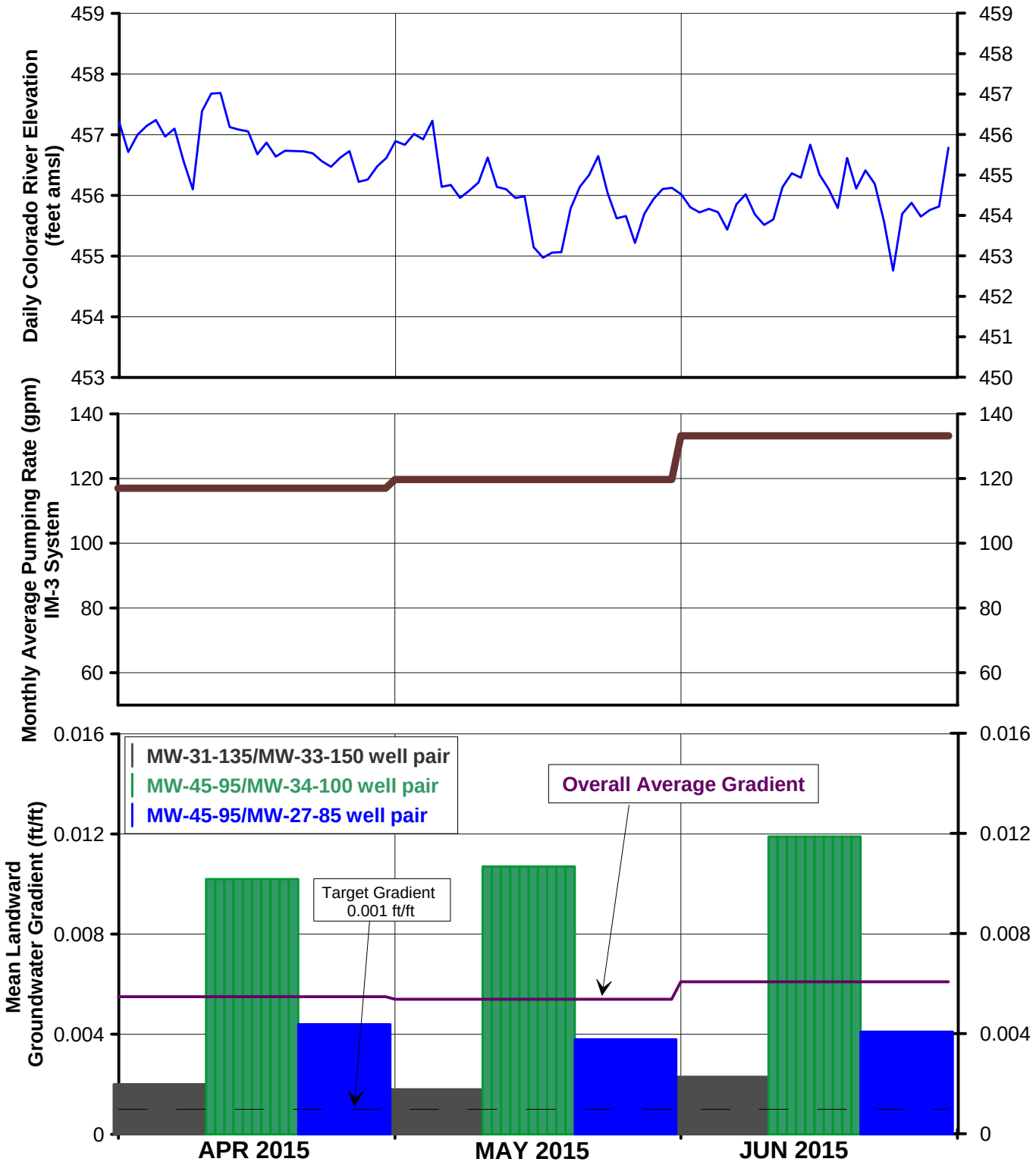
Interpreted groundwater flow direction

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

SECOND 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_2Q\FIGURE4-5_XSECA_GW.GDW;



Notes:

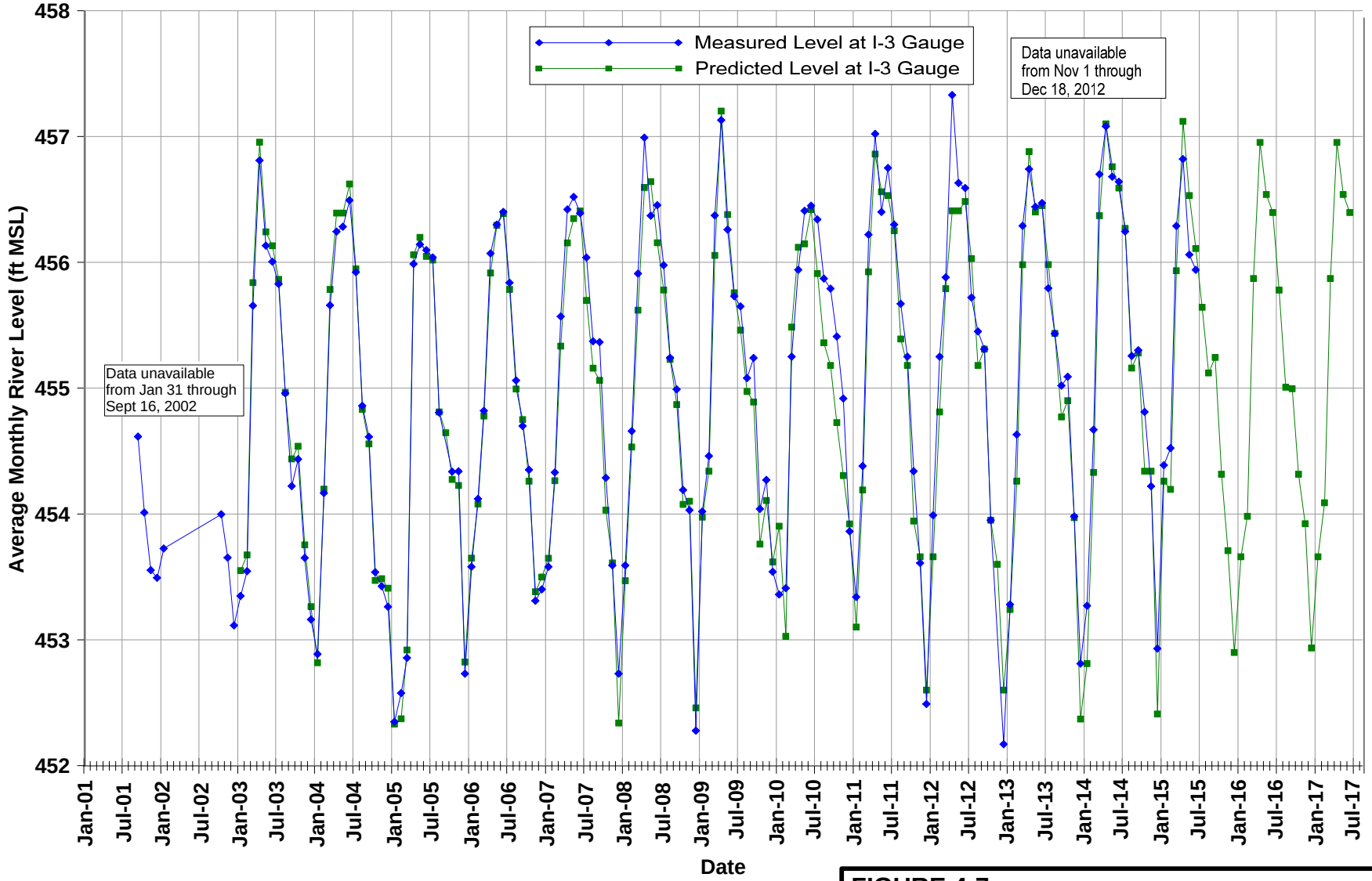
1. For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2. Refer to Table 4-1 and Section 4.4 for discussion of pumping data.
3. Pumping rate plotted is the combined rate of extraction wells TW-3D and PE-1 in operation each month.
4. Refer to Table 4-3 and Section 4.5 for discussion 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, SECOND QUARTER 2015

SECOND 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 July 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

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

CH2MHILL

Appendix A
Well Inspection and Maintenance Log, Second Quarter 2015

Table A-1
Well Inspection Log, Second Quarter 2015
Second 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	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
CW-1M	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
CW-2D	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
CW-2M	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
CW-3D	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
CW-3M	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
CW-4D	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
CW-4M	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-01	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		needs paint			
MW-03	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		needs paint			
MW-04	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		needs paint			
MW-05	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		needs paint			
MW-06	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		needs paint			
MW-07	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		needs paint			
MW-08	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		needs paint			
MW-09	06/15/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-10	06/15/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-11	06/15/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-12	05/05/15	Y	N	Y	N	Y	Y	*	N *	Y	Y	N	Y		Pad buried, soil deposition. No change.			
MW-13	06/09/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		Needs paint			
MW-14	06/09/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-15	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-16	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		needs paint			
MW-17	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-18	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-19	06/09/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-20-070	06/11/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		needs paint			
MW-20-100	06/11/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		needs paint			
MW-20-130	06/11/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y		needs paint			
MW-21	05/06/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-22	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-23-060 MW-23-080	06/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-24 BR	06/15/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-24A	06/15/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-24B	06/15/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-25	06/09/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-26	06/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-27-020	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-27-060	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		Has graffitti on it			
MW-27-085	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-28-025	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-28-090	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-29	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-30-030	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		Re-mark well case			
MW-30-050	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-31-060	06/11/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-31-135	06/11/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					

Table A-1
Well Inspection Log, Second Quarter 2015
Second 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
MW-32-020	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-32-035	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-33-150	04/27/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-33-210	04/27/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-33-040	04/27/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-33-090	04/27/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-34-055	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-34-080	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-34-100	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-35-135	05/07/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-35-60	05/07/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-36-020 MW-36-070	04/23/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-36-090 MW-36-040	04/23/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-36-050 MW-36-100	04/23/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-37D	04/27/15	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y					
MW-37S	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		No bollards, no change.			
MW-38S	06/15/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-38D	06/15/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-39-040 MW-39-070	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-39-050 MW-39-080	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-39-060 MW-39-100	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-40D	05/06/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-40S	06/08/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-41D	05/06/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		Slight erosion under pad, 1"; no change.			
MW-41M	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		Slight erosion under pad, 1"; no change.			
MW-41S	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-42-030	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-42-055	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-42-065	04/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-43-025	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-43-075	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-43-090	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-44-125 MW-44-070	04/23/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-44-115	04/23/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-45-095a MW-45-095b	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-46-175 MW-46-205	04/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-47-055 MW-47-115	05/07/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					

Table A-1
Well Inspection Log, Second Quarter 2015
Second 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
MW-48	05/07/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-49-135 MW-49-275 MW-49-365	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-50-095 MW-50-200	05/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-51	05/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-52D/M/S	04/22/15	NA	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-53D/M/S	04/22/15	NA	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-54-085 MW-54-140	04/28/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-54-195	04/28/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-55-045 MW-55-120	06/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-56 D/S/M	04/28/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
MW-57-050	05/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-57-070	05/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-57-185	05/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-58BR	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-58-065	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-59-100	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-60-125	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-60BR-245	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-61-110	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-62-110 MW-62-190	06/10/15	N	N	N	N	Y	NA	Y	N	Y	Y	N	Y		Flute wells - cant lock. No DTW measurements			
MW-62-065	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-63-065	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-64BR	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-65-160 MW-65-225	05/11/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-66-165 MW-66-230	05/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-66BR-270	06/15/15	Y	N	Y	N	Y	NA	Y	N*	Y	Y	N*	Y		Soil deposition near, over well			
MW-67-185	05/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-67-225 MW-67-260	05/20/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-68BR-280	06/15/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-68-180 MW-68-290	05/21/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-69-195	06/15/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-70BR-225	06/10/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-70-105	05/02/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-71-035	05/06/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-72-080	05/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
MW-72BR-200	05/04/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					

Table A-1
Well Inspection Log, Second Quarter 2015
Second 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
MW-73-080	05/06/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	Y	Y					
MW-74-240	05/12/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	Y	Y					
MWP-08	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	Y	Y					
MWP-10	06/08/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	Y	Y					
OW-1D	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	Y	Y					
OW-1M	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	Y	Y					
OW-1S	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
OW-2D	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
OW-2M	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
OW-2S	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
OW-3D	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
OW-3M	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
OW-3S	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
OW-5D	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		slight erosion under concrete pad - no change			
OW-5M	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		slight erosion under concrete pad - no change			
OW-5S	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		slight erosion under concrete pad - no change			
P2	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y		There is a different well labeled P2 on the steel casing at the quarry but PVC case inside says MWP-12. This inspected well is at the new ponds near MW-4. It is labeled PX-2 on the lid and P3 on the steel casing, but shows up as P2 on the map. Since the quarry well is located near the "old ponds" area there is a chance that well is actually an MWP designation well.	Records search for correct designations for these wells.		
PG&E-8	06/15/15	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y					
PGE-7	06/15/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PT-1 3 WELLS	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PT-2 3 WELLS	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PT-3 3 WELLS	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PT-4 3 WELLS	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PT-5 3 WELLS	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PT-6 3 WELLS	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PT-7 S/D	06/15/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y					
PT-7M	06/15/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y					
PT-8 S/D	06/15/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y					
PT-8M	06/15/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y					
PT-9 S/D	06/15/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y					

Table A-1
Well Inspection Log, Second Quarter 2015
Second 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
PT-9M	06/15/15	Y	N	NA	N	Y	NA	Y	N	Y	Y	N	Y					
PTI-1D	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PTI-1M	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
PTI-1S	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
TW-01	06/15/15	Y	N	N	N	Y	NA	Y	N	Y	Y	N	Y					
TW-04	06/16/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					
TW-05	06/09/15	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y					

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

Appendix B
Lab Reports, Second Quarter 2015

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

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 05-21-2015
EMAX Batch No.: 15E025

Attn: Marlon Cartin

Asset Labs
3151 W. Post Road
Las Vegas NV 89118

Subject: Laboratory Report
Project: PG&E Topock

Enclosed is the Laboratory report for samples received on 05/07/15.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-54-085-203	E025-01	04/28/15	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-54-085-203-EB	E025-02	04/28/15	WATER	HOLD
MW-54-140-203	E025-03	04/28/15	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-54-140-203-EB	E025-04	04/28/15	WATER	HOLD
MW-54-195-203	E025-05	04/28/15	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-54-195-203-EB	E025-06	04/28/15	WATER	HOLD
MW-56D-203	E025-07	04/28/15	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM
MW-56M-203	E025-08	04/28/15	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM
MW-56S-203	E025-09	04/28/15	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM
MW-141-203	E025-10	04/29/15	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM
MW-261-203	E025-11	04/29/15	WATER	CHROMIUM HEXAVALENT BY IC
MW-55-045-203	E025-12	04/29/15	WATER	CHROMIUM HEXAVALENT BY IC

Sample ID	Control #	Col Date	Matrix	Analysis
				DISSOLVED CHROMIUM
MW-55-045-203-EB	E025-13	04/29/15	WATER	HOLD
MW-55-120-203	E025-14	04/29/15	WATER	CHROMIUM HEXAVALENT BY IC
				DISSOLVED CHROMIUM

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

EMAX

15E025

CH2MHILL

CHAIN OF CUSTODY RECORD

4/29/2015 2:10:44 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-AZ
Turnaround Time 10 Days
Shipping Date: 5/5/2015
COC Number: 6

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 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			
			Filtered:	Field	Field	Field	Field	Field	Field			
			Holding Time:	28	28	180	180	180	180			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered Mn	Metals (6020A) Field Filtered Chromium		Number of Containers	COMMENTS
MW-54-085-203	4/28/2015	12:58	Water		X	X	X	X	X		4		1
MW-54-085-203-EB	4/28/2015	12:14	Water	X					X		2	Hold	2
MW-54-140-203	4/28/2015	13:22	Water		X	X	X	X	X		4		3
MW-54-140-203-EB	4/28/2015	12:18	Water	X					X		2	Hold	4
MW-54-195-203	4/28/2015	13:52	Water		X	X	X	X	X		4		5
MW-54-195-203-EB	4/28/2015	12:20	Water	X					X		2	Hold	6
MW-56D-203	4/28/2015	10:42	Water	X			X				2		7
MW-56M-203	4/28/2015	9:16	Water	X			X				2		8
MW-56S-203	4/28/2015	8:40	Water	X			X				2		9
MW-141-203	4/29/2015	7:00	Water		X		X		X		4		10
MW-261-203	4/29/2015	7:10	Water	X							1		11
MW-55-045-203	4/29/2015	9:44	Water		X		X		X		4		12
MW-55-045-203-EB	4/29/2015	9:10	Water	X					X		2	Hold	13

	Signatures	Date/Time
Approved by		5-5-15 1330
Sampled by		
Relinquished by		
Received by		5/5/15 1330
Relinquished by		5/5/15 1825
Received by		5/5/15
RELINQUISHED BY:		5/6/15 1600
Rec'd by:		05-07-15 0900

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 3-5°C 1642
Airbill No:
Lab Name:
Lab Phone:

ATTN:

Sample Custody

Special Instructions:

April 7 - May 14, 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

Temp = 3.4°C

15E025

CH2MHILL **CHAIN OF CUSTODY RECORD** *4/29/2015 2:10:45 PM* Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-AZ
Turnaround Time 10 Days
Shipping Date: 5/5/2015
COC Number: 6

	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Arsenic (6020A) Field Filtered	Metals (6020A) Field Filtered Chromium	Metals (SW6010B/SW6020Adis) Field Filtered Mn	Metals (6020A) Field Filtered Chromium	Number of Containers	COMMENTS
Container:				250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 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		
Filtered:				Field	Field	Field	Field	Field	Field		
Holding Time:				28	28	180	180	180	180		
MW-55-120-203	4/29/2015	10:32	Water		x		x		x	4	14
TOTAL NUMBER OF CONTAINERS										39	

	Signatures	Date/Time
Approved by		5-5-13
Sampled by	[signature]	1330
Relinquished by		
Received by	[signature]	5/5/15 1330
Relinquished by	[signature]	5/5/15 1425
Received by	[signature]	5/5/15
RELINQUISHED B/:	[signature]	5/6/15 1600
Rec'd by:	[signature]	050715 0900

Shipping Details
Method of Shipment: courier
On Ice: yes / no 8-2°C
Airbill No: LP#2
Lab Name:
Lab Phone:

ATTN:
Sample Custody

Special Instructions:
April 7 - May 14, 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

SAMPLE RECEIPT FORM 1 Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 15E025
☑ Fedex ☐ UPS ☐ GSO ☐ Others	8050 0469 1272	Recipient Shenfama
☐ EMAX Courier ☐ Client Delivery		Date 05-07-15 Time 0900

COC INSPECTION

☑ Client Name ☑ Client PM/FC ☐ Sampler Name ☑ Sampling Date/Time ☑ Sample ID ☑ Matrix
☐ Address ☑ Tel # / Fax # ☐ Courier Signature ☑ Analysis Required ☑ Preservative (if any) ☑ TAT
Safety Issues (if any) ☐ High concentrations expected ☐ From Superfund Site ☐ Rad screening required
Note:

PACKAGING INSPECTION

Container ☑ Cooler ☐ Box ☐ Other
Condition ☐ Custody Seal ☐ Intact ☐ Damaged
Packaging ☐ Bubble Pack ☐ Styrofoam ☐ Popcorn ☑ Sufficient ☑ plastic bag
Temperatures (Cool, ≤6 °C but not frozen) ☑ Cooler 1 3.4 °C ☐ Cooler 2 ____ °C ☐ Cooler 3 ____ °C ☐ Cooler 4 ____ °C ☐ Cooler 5 ____ °C
☐ Cooler 6 ____ °C ☐ Cooler 7 ____ °C ☐ Cooler 8 ____ °C ☐ Cooler 9 ____ °C ☐ Cooler 10 ____ °C
Thermometer: A - S/N ____ FM 1/20/15 B - S/N 140252070 C - S/N 140252067 D - S/N ____
Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**
Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-14	1-39	D12	Cr VI → 250mL per COC, rec'd	ok
↓	↓	↓	125mL. Metals → 500mL	
			per COC, - rec'd 250mL.	
4, 6, 8, 14	11, 18, 21, 38	D10		ok
10, 12, 14	27, 28, 32, 33,	D22	Extra volume rec'd for	hold extra bottles
↓	38, 39	↓	metals.	

5/8/15

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND: ☐ **Continue to next page.**

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in ____	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in ____	D16	Preservation not indicated in ____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in ____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	
D10	No initial/date on corrections in COC/label	D22	Extra volume rec'd for	R10	
D11	Container count mismatch COC vs received	D23	Metals	R11	
D12	Container size mismatch COC vs received	D24		R12	

05/07/15

REVIEWS:

Sample Labeling [signature] Date 05/07/15 5/7/15

SRF [signature] Date 5/8/15

PM [signature] Date 5/7/15

EMAX Laboratories, Inc. 1835 W. 205th St., Torrance, Ca 90501

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 15E025

METHOD SW6020A
DISSOLVED CHROMIUM AND DISSOLVED METALS BY ICP-MS

A total of six (6) water samples for Dissolved Chromium and three (3) water samples for Dissolved Metals were received on 05/07/15 to be analyzed for Dissolved Chromium and Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME007WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IME007WL/IME007WC - all analytes were within LCS QC limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed and the following was noted: E025-05M/S for Dissolved Metals - Percent recovery for Manganese (6X) was not within MS/MSD QC limits. The enclosed value (#X) is the ratio of parent sample result and spike amount. Presence of matrix interference was suspected. The rest of the analytes were in control. Analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.
Arsenic in sample-E025-05 (including all associated QC, Post Spike, Serial Dilution, Matrix Spike and Matrix Spike Duplicate) was reported at 5x dilution due to failed internal standard (<70%) at 1x dilution.

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ASSET LABS
Project : PG&E TOPOCK

SDG NO. : 15E025
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MW-54-085-203	E025-01	1	NA	05/15/1517:42	05/11/1510:47	F6E10031	F6E10026	IME007W	Field Sample
MW-54-140-203	E025-03	1	NA	05/15/1517:46	05/11/1510:47	F6E10032	F6E10026	IME007W	Field Sample
MBLK1W	IME007WB	1	NA	05/18/1518:13	05/11/1510:47	F6E11025	F6E11023	IME007W	Method Blank
LCS1W	IME007WL	1	NA	05/18/1518:17	05/11/1510:47	F6E11026	F6E11023	IME007W	Lab Control Sample (LCS)
LCD1W	IME007WC	1	NA	05/18/1518:21	05/11/1510:47	F6E11027	F6E11023	IME007W	LCS Duplicate
MW-54-195-203AS	E025-05A	1	NA	05/20/1514:12	05/11/1510:47	F6E13017	F6E13014	IME007W	Analytical Spike Sample
MW-54-195-203	E025-05N	1	NA	05/20/1514:16	05/11/1510:47	F6E13018	F6E13014	IME007W	Field Sample
MW-54-195-203DL	E025-05J	5	NA	05/20/1514:20	05/11/1510:47	F6E13019	F6E13014	IME007W	Diluted Sample
MW-54-195-203MS	E025-05M	1	NA	05/20/1514:24	05/11/1510:47	F6E13020	F6E13014	IME007W	Matrix Spike Sample (MS)
MW-54-195-203MSD	E025-05S	1	NA	05/20/1514:29	05/11/1510:47	F6E13021	F6E13014	IME007W	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/28/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-54-085-203	Date Analyzed:	05/15/15 17:42 # 05/18/15 18:25
Lab Samp ID:	E025-01 #E025-01I	Dilution Factor:	1 # 5
Lab File ID:	F6E10031 #F6E11028	Matrix	: WATER
Ext Btch ID:	IME007W	% Moisture	: NA
Calib. Ref.:	F6E10026 #F6E11023	Instrument ID	: T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# Arsenic	4.5	1.00	0.500
Chromium	ND	1.00	0.200
Manganese	614	10.0	0.200

Members of the Associated File

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/28/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-54-140-203	Date Analyzed:	05/15/15 17:46 # 05/18/15 18:30
Lab Samp ID:	E025-03 #E025-03I	Dilution Factor:	1 # 5
Lab File ID:	F6E10032 #F6E11029	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E10026 #F6E11023	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# Arsenic	3.1	1.00	0.500
Chromium	ND	1.00	0.200
Manganese	104	10.0	0.200

Members of the Associated File

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/28/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-54-195-203	Date Analyzed:	05/20/15 14:16 # 05/18/15 18:59
Lab Samp ID:	E025-05N #E025-05I	Dilution Factor:	1 # 5
Lab File ID:	F6E13018 #F6E11036	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E13014 #F6E11033	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# Arsenic	1.1	1.00	0.500
Chromium	ND	1.00	0.200
Manganese	175	10.0	0.200

Members of the Associated File

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E TOPOCK	Date Received:	05/11/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MBLK1W	Date Analyzed:	05/18/15 18:13
Lab Samp ID:	IME007WB	Dilution Factor:	1
Lab File ID:	F6E11025	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E11023	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	0.200	0.100
Chromium	ND	1.00	0.200
Manganese	ND	10.0	0.200

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 15E025
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IME007WB	IME007WL	IME007WC		
LAB FILE ID:	F6E11025	F6E11026	F6E11027		
DATIME EXTRCTD:	05/11/1510:47	05/11/1510:47	05/11/1510:47	DATE COLLECTED:	NA
DATIME ANALYZD:	05/18/1518:13	05/18/1518:17	05/18/1518:21	DATE RECEIVED:	05/11/15
PREP. BATCH:	IME007W	IME007W	IME007W		
CALIB. REF:	F6E11023	F6E11023	F6E11023		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Arsenic	ND	30.0	28.2	94	30.0	28.3	94	0	85-115	20
Chromium	ND	30.0	28.0	93	30.0	28.4	95	2	85-115	20
Manganese	ND	30.0	30.3	101	30.0	30.6	102	1	85-115	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 15E025
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MW-54-195-203				
CONTROL NO.:	E025-05N	E025-05M	E025-05S		
LAB FILE ID:	F6E13018	F6E13020	F6E13021		
DATIME EXTRCTD:	05/11/1510:47	05/11/1510:47	05/11/1510:47	DATE COLLECTED:	04/28/15
DATIME ANALYZD:	05/20/1514:16	05/20/1514:24	05/20/1514:29	DATE RECEIVED:	05/07/15
PREP. BATCH:	IME007W	IME007W	IME007W		
CALIB. REF:	F6E13014	F6E13014	F6E13014		

ACCESSION:

PARAMETER	SMPL RSLT ug/L	SPIKE AMT ug/L	MS RSLT ug/L	MS % REC	SPIKE AMT ug/L	MSD RSLT ug/L	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
# Arsenic	1.09	30.0	30.6	98	30.0	31.0	100	0	75-125	20
Chromium	ND	30.0	24.7	82	30.0	24.5	82	1	75-125	20
Manganese	175	30.0	197	73*	30.0	196	70*	0	75-125	20

E025-05M/S : Analyzed at DF 5 on 05/18/15 18:34/18:38 | File ID F6E11030/031

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 15E025
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MW-54-195-203	MW-54-195-203DL		
EMAX SAMP ID:	E025-05N	E025-05J		
LAB FILE ID:	F6E13018	F6E13019		
DATE EXTRACTED:	05/11/1510:47	05/11/1510:47	DATE COLLECTED:	04/28/15
DATE ANALYZED:	05/20/1514:16	05/20/1514:20	DATE RECEIVED:	05/07/15
PREP. BATCH:	IME007W	IME007W		
CALIB. REF:	F6E13014	F6E13014		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
# Arsenic	1.09	ND	NA	10
Chromium	ND	ND	0	10
Manganese	175	195	11*	10

E025-05J : Analyzed at DF 25 on 05/18/15 19:04 | File ID F6E11037

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 15E025
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MW-54-195-203			
CONTROL NO.:	E025-05N	E025-05A		
LAB FILE ID:	F6E13018	F6E13017		
DATIME EXTRCTD:	05/11/1510:47	05/11/1510:47	DATE COLLECTED:	04/28/15
DATIME ANALYZD:	05/20/1514:16	05/20/1514:12	DATE RECEIVED:	05/07/15
PREP. BATCH:	IME007W	IME007W		
CALIB. REF:	F6E13014	F6E13014		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
# Arsenic	1.09	150	142	95	75-125
Chromium	ND	30.0	26.7	89	75-125
Manganese	175	30.0	199	80	75-125

E025-05A : Analyzed at DF 5 on 05/18/15 18:55 | File ID F6E11035

LAB CHRONICLE
DISSOLVED CHROMIUM BY ICP-MS

Client : ASSET LABS
Project : PG&E TOPOCK

SDG NO. : 15E025
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MW-56D-203	E025-07	1	NA	05/15/1518:25	05/11/1510:47	F6E10041	F6E10037	IME007W	Field Sample
MW-56M-203	E025-08	1	NA	05/15/1518:29	05/11/1510:47	F6E10042	F6E10037	IME007W	Field Sample
MW-56S-203	E025-09	1	NA	05/15/1518:33	05/11/1510:47	F6E10043	F6E10037	IME007W	Field Sample
MW-141-203	E025-10	1	NA	05/15/1518:37	05/11/1510:47	F6E10044	F6E10037	IME007W	Field Sample
MW-55-045-203	E025-12	1	NA	05/15/1518:42	05/11/1510:47	F6E10045	F6E10037	IME007W	Field Sample
MW-55-120-203	E025-14	1	NA	05/15/1518:46	05/11/1510:47	F6E10046	F6E10037	IME007W	Field Sample
MBLK1W	IME007WB	1	NA	05/18/1518:13	05/11/1510:47	F6E11025	F6E11023	IME007W	Method Blank
LCS1W	IME007WL	1	NA	05/18/1518:17	05/11/1510:47	F6E11026	F6E11023	IME007W	Lab Control Sample (LCS)
LCD1W	IME007WC	1	NA	05/18/1518:21	05/11/1510:47	F6E11027	F6E11023	IME007W	LCS Duplicate
MW-54-195-203AS	E025-05A	1	NA	05/20/1514:12	05/11/1510:47	F6E13017	F6E13014	IME007W	Analytical Spike Sample
MW-54-195-203	E025-05N	1	NA	05/20/1514:16	05/11/1510:47	F6E13018	F6E13014	IME007W	Field Sample
MW-54-195-203DL	E025-05J	5	NA	05/20/1514:20	05/11/1510:47	F6E13019	F6E13014	IME007W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

TOLL

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/28/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-56D-203	Date Analyzed:	05/15/15 18:25
Lab Samp ID:	E025-07	Dilution Factor:	1
Lab File ID:	F6E10041	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E10037	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/28/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-56M-203	Date Analyzed:	05/15/15 18:29
Lab Samp ID:	E025-08	Dilution Factor:	1
Lab File ID:	F6E10042	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E10037	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/28/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-56S-203	Date Analyzed:	05/15/15 18:33
Lab Samp ID:	E025-09	Dilution Factor:	1
Lab File ID:	F6E10043	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E10037	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/29/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-141-203	Date Analyzed:	05/15/15 18:37
Lab Samp ID:	E025-10	Dilution Factor:	1
Lab File ID:	F6E10044	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E10037	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/29/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-55-045-203	Date Analyzed:	05/15/15 18:42
Lab Samp ID:	E025-12	Dilution Factor:	1
Lab File ID:	F6E10045	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E10037	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	04/29/15
Project	: PG&E TOPOCK	Date Received:	05/07/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MW-55-120-203	Date Analyzed:	05/15/15 18:46
Lab Samp ID:	E025-14	Dilution Factor:	1
Lab File ID:	F6E10046	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E10037	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	7.0	1.00	0.200

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E TOPOCK	Date Received:	05/11/15
SDG NO.	: 15E025	Date Extracted:	05/11/15 10:47
Sample ID:	MBLK1W	Date Analyzed:	05/18/15 18:13
Lab Samp ID:	IME007WB	Dilution Factor:	1
Lab File ID:	F6E11025	Matrix :	WATER
Ext Btch ID:	IME007W	% Moisture :	NA
Calib. Ref.:	F6E11023	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 15E025
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IME007WB	IME007WL	IME007WC		
LAB FILE ID:	F6E11025	F6E11026	F6E11027		
DATIME EXTRCTD:	05/11/1510:47	05/11/1510:47	05/11/1510:47	DATE COLLECTED:	NA
DATIME ANALYZD:	05/18/1518:13	05/18/1518:17	05/18/1518:21	DATE RECEIVED:	05/11/15
PREP. BATCH:	IME007W	IME007W	IME007W		
CALIB. REF:	F6E11023	F6E11023	F6E11023		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Chromium	ND	30.0	28.0	93	30.0	28.4	95	2	85-115	20

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
BATCH NO.: 15E025
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MW-54-195-203	MW-54-195-203DL		
EMAX SAMP ID:	E025-05N	E025-05J		
LAB FILE ID:	F6E13018	F6E13019		
DATE EXTRACTED:	05/11/1510:47	05/11/1510:47	DATE COLLECTED:	04/28/15
DATE ANALYZED:	05/20/1514:16	05/20/1514:20	DATE RECEIVED:	05/07/15
PREP. BATCH:	IME007W	IME007W		
CALIB. REF:	F6E13014	F6E13014		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Chromium	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: ASSET LABS
PROJECT: PG&E TOPOCK
SDG NO.: 15E025
METHOD: SW6020A (DISSOLVED)

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MW-54-195-203			
CONTROL NO.:	E025-05N	E025-05A		
LAB FILE ID:	F6E13018	F6E13017		
DATIME EXTRCTD:	05/11/1510:47	05/11/1510:47	DATE COLLECTED:	04/28/15
DATIME ANALYZD:	05/20/1514:16	05/20/1514:12	DATE RECEIVED:	05/07/15
PREP. BATCH:	IME007W	IME007W		
CALIB. REF:	F6E13014	F6E13014		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Chromium	ND	30.0	26.7	89	75-125

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E TOPOCK

SDG : 15E025

METHOD E218.6
HEXAVALENT CHROMIUM

A total of ten (10) water samples were received on 05/07/15 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed. HCE003WB and HCE005WB were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two (2) sets of LCS/LCD were analyzed. Hexavalent Chromium was within LCS QC limits in HCE003WL/HCE003WC. Hexavalent Chromium was within LCS QC limits in HCE005WL/HCE005WC. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, ten (10) MSs were analyzed. Matrix spike recoveries for Hexavalent Chromium were within MS QC limits for all MSs. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.
Samples E025-01, -03, -11 and -14 were reported from DF=5 due to matrix interference.
Samples E025-05, -07 and -08 were reported from DF=10 due to matrix interference.

METHOD E218.6
HEXAVALENT CHROMIUM

Client : ASSET LABS
Project : PG&E TOPOCK
Batch No. : 15E025

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCE003WB	ND	1	NA	0.2	0.1	05/08/1518:04	NA	IE10004	IE10001	HCE003W	NA	NA
LCS1W	HCE003WL	2.1	1	NA	0.2	0.1	05/08/1518:25	NA	IE10006	IE10001	HCE003W	NA	NA
LCD1W	HCE003WC	2.0	1	NA	0.2	0.1	05/08/1518:35	NA	IE10007	IE10001	HCE003W	NA	NA
MW-56S-203	E025-09	ND	1	NA	0.2	0.1	05/08/1521:01	NA	IE10020	IE10012	HCE003W	04/28/1508:40	05/07/15
MW-56S-203MS	E025-09M	0.97	1	NA	0.2	0.1	05/08/1521:12	NA	IE10021	IE10012	HCE003W	04/28/1508:40	05/07/15
MW-141-203	E025-10	ND	1	NA	0.2	0.1	05/08/1521:22	NA	IE10022	IE10012	HCE003W	04/29/1507:00	05/07/15
MW-141-203MS	E025-10M	0.97	1	NA	0.2	0.1	05/08/1521:32	NA	IE10023	IE10012	HCE003W	04/29/1507:00	05/07/15
MW-55-045-203	E025-12	ND	1	NA	0.2	0.1	05/08/1522:35	NA	IE10028	IE10024	HCE003W	04/29/1509:44	05/07/15
MW-55-045-203MS	E025-12M	0.97	1	NA	0.2	0.1	05/08/1522:45	NA	IE10029	IE10024	HCE003W	04/29/1509:44	05/07/15
MBLK2W	HCE005WB	ND	1	NA	0.2	0.1	05/11/1513:14	NA	IE11003	IE11001	HCE005W	NA	NA
LCS2W	HCE005WL	1.9	1	NA	0.2	0.1	05/11/1513:34	NA	IE11005	IE11001	HCE005W	NA	NA
LCD2W	HCE005WC	1.8	1	NA	0.2	0.1	05/11/1513:45	NA	IE11006	IE11001	HCE005W	NA	NA
MW-55-120-203	E025-14I	6.7	5	NA	1	0.5	05/11/1513:55	NA	IE11007	IE11001	HCE005W	04/29/1510:32	05/07/15
MW-55-120-203DUP	E025-14ID	6.7	5	NA	1	0.5	05/11/1514:06	NA	IE11008	IE11001	HCE005W	04/29/1510:32	05/07/15
MW-55-120-203MS	E025-14IM	11.8	5	NA	1	0.5	05/11/1514:16	NA	IE11009	IE11001	HCE005W	04/29/1510:32	05/07/15
MW-54-085-203	E025-01I	ND	5	NA	1	0.5	05/11/1514:26	NA	IE11010	IE11001	HCE005W	04/28/1512:58	05/07/15
MW-54-085-203MS	E025-01IM	4.8	5	NA	1	0.5	05/11/1514:37	NA	IE11011	IE11001	HCE005W	04/28/1512:58	05/07/15
MW-54-140-203	E025-03I	ND	5	NA	1	0.5	05/11/1516:09	NA	IE11014	IE11012	HCE005W	04/28/1513:22	05/07/15
MW-54-140-203MS	E025-03IM	4.6	5	NA	1	0.5	05/11/1516:19	NA	IE11015	IE11012	HCE005W	04/28/1513:22	05/07/15
MW-261-203	E025-11I	ND	5	NA	1	0.5	05/11/1517:32	NA	IE11022	IE11012	HCE005W	04/29/1507:10	05/07/15
MW-261-203MS	E025-11IM	4.6	5	NA	1	0.5	05/11/1517:43	NA	IE11023	IE11012	HCE005W	04/29/1507:10	05/07/15
MW-54-195-203	E025-05J	ND	10	NA	2	1	05/11/1518:14	NA	IE11026	IE11024	HCE005W	04/28/1513:52	05/07/15
MW-54-195-203MS	E025-05JM	10.2	10	NA	2	1	05/11/1518:24	NA	IE11027	IE11024	HCE005W	04/28/1513:52	05/07/15
MW-56D-203	E025-07J	ND	10	NA	2	1	05/11/1518:35	NA	IE11028	IE11024	HCE005W	04/28/1510:42	05/07/15
MW-56D-203MS	E025-07JM	9.7	10	NA	2	1	05/11/1518:45	NA	IE11029	IE11024	HCE005W	04/28/1510:42	05/07/15
MW-56M-203	E025-08J	ND	10	NA	2	1	05/11/1518:55	NA	IE11030	IE11024	HCE005W	04/28/1509:16	05/07/15
MW-56M-203MS	E025-08JM	9.7	10	NA	2	1	05/11/1519:06	NA	IE11031	IE11024	HCE005W	04/28/1509:16	05/07/15

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	HCE003WB	HCE003WL	HCE003WC
LAB FILE ID :	IE10004	IE10006	IE10007
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	05/08/1518:04	05/08/1518:25	05/08/1518:35
PREP BATCH :	HCE003W	HCE003W	HCE003W
CALIBRATION REF:	IE10001	IE10001	IE10001

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	2	2.1	103	2	2.0	102	1	90-110	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK2W	LCS2W	LCD2W
LAB SAMPLE ID :	HCE005WB	HCE005WL	HCE005WC
LAB FILE ID :	IE11003	IE11005	IE11006
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	05/11/1513:14	05/11/1513:34	05/11/1513:45
PREP BATCH :	HCE005W	HCE005W	HCE005W
CALIBRATION REF:	IE11001	IE11001	IE11001

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	2	1.9	93	2	1.8	92	2	90-110	20

8027

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-54-085-203	MW-54-085-203MS
LAB SAMPLE ID	: E025-01I	E025-01M
LAB FILE ID	: IE11010	IE11011
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1514:26	05/11/1514:37
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE11001	IE11001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5	4.8	96	90-110

8028

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-54-140-203	MW-54-140-203MS
LAB SAMPLE ID	: E025-03I	E025-03M
LAB FILE ID	: IE11014	IE11015
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1516:09	05/11/1516:19
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE11012	IE11012

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5	4.6	92	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW-54-195-203	MW-54-195-203MS
LAB SAMPLE ID	: E025-05J	E025-05M
LAB FILE ID	: IE11026	IE11027
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1518:14	05/11/1518:24
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE11024	IE11024

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	10	10.2	102	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW-56D-203	MW-56D-203MS
LAB SAMPLE ID	: E025-07J	E025-07M
LAB FILE ID	: IE11028	IE11029
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1518:35	05/11/1518:45
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE11024	IE11024

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	10	9.7	97	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW-56M-203	MW-56M-203MS
LAB SAMPLE ID	: E025-08J	E025-08M
LAB FILE ID	: IE11030	IE11031
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1518:55	05/11/1519:06
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE11024	IE11024

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	10	9.7	97	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-56S-203	MW-56S-203MS
LAB SAMPLE ID	: E025-09	E025-09M
LAB FILE ID	: IE10020	IE10021
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/08/1521:01	05/08/1521:12
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE10012	IE10012

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1	0.97	97	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-141-203	MW-141-203MS
LAB SAMPLE ID	: E025-10	E025-10M
LAB FILE ID	: IE10022	IE10023
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/08/1521:22	05/08/1521:32
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE10012	IE10012

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1	0.97	97	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-261-203	MW-261-203MS
LAB SAMPLE ID	: E025-11I	E025-11M
LAB FILE ID	: IE11022	IE11023
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1517:32	05/11/1517:43
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE11012	IE11012

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5	4.6	93	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-55-045-203	MW-55-045-203MS
LAB SAMPLE ID	: E025-12	E025-12M
LAB FILE ID	: IE10028	IE10029
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/08/1522:35	05/08/1522:45
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE10024	IE10024

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1	0.97	97	90-110

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-55-120-203	MW-55-120-203DUP
LAB SAMPLE ID	: E025-14I	E025-14ID
LAB FILE ID	: IE11007	IE11008
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1513:55	05/11/1514:06
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE11001	IE11001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	DUP RESULT (ug/L)	RPD (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	6.7	6.7	0	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E TOPOCK
BATCH NO. : 15E025
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-55-120-203	MW-55-120-203MS
LAB SAMPLE ID	: E025-14I	E025-14M
LAB FILE ID	: IE11007	IE11009
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1513:55	05/11/1514:16
PREP BATCH	: HCE005W	HCE005W
CALIBRATION REF	: IE11001	IE11001

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	6.7	5	11.8	101	90-110

April 22, 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.: N015240

RE: PG&E Topock, 658274.01.IM.OP.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 07, 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:** *22-Apr-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N015240

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:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N015240-001C-MS2 and N015240-001C-MSD2 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.

RPD for Matrix Spike(MS) and Matrix Spike Duplicate(MSD) is outside criteria for Sodium ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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

Date: *22-Apr-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N015240
Contract No: IM3PLANT-EW

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015240-001A	PE-01-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-001B	PE-01-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-001C	PE-01-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-001D	PE-01-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-001E	PE-01-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-002A	TW-03D-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-002B	TW-03D-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-002C	TW-03D-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-002D	TW-03D-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015
N015240-002E	TW-03D-229	Water	4/7/2015 1:00:00 PM	4/7/2015	4/22/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150408C**	QC Batch: **R99818**			PrepDate			Analyst: **LR**
Specific Conductance	4200	0.10	0.10		umhos/cm	1	4/8/2015 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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150408C**	QC Batch: **R99818**			PrepDate			Analyst: **LR**
Specific Conductance	8400	0.10	0.10		umhos/cm	1	4/8/2015 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

Date: *22-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N015240-001A DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **99818**
Client ID: **ZZZZZZ** Batch ID: **R99818** TestNo: **EPA 120.1** Analysis Date: **4/8/2015** SeqNo: **1973697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	4280.000	0.10						4250	0.703	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
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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150408D**	QC Batch: **R99819**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	4/8/2015 12:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/8/2015 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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150408D** QC Batch: **R99819**				PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	4/8/2015 12:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/8/2015 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: *22-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N015239-001C DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **99819**
Client ID: **ZZZZZZ** Batch ID: **R99819** TestNo: **SM4500-H+B** Analysis Date: **4/8/2015** SeqNo: **1973706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.100	0.10						7.140	0.562	10	H
Temp. at time of pH Analysis	18.600	0.10						18.80	1.07	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
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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150408E**	QC Batch: **50156**				PrepDate	**4/8/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2500	33	33		mg/L	1	4/8/2015 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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150408E**	QC Batch: **50156**				PrepDate	**4/8/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4700	50	50		mg/L	1	4/8/2015 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		

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-50156** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/8/2015** RunNo: **99836**
Client ID: **PBW** Batch ID: **50156** TestNo: **SM2540C** Analysis Date: **4/8/2015** SeqNo: **1974795**

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-50156** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/8/2015** RunNo: **99836**
Client ID: **LCSW** Batch ID: **50156** TestNo: **SM2540C** Analysis Date: **4/8/2015** SeqNo: **1974796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1001.000	10	1000	0	100	80	120				

Sample ID **N015240-001A DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/8/2015** RunNo: **99836**
Client ID: **ZZZZZZ** Batch ID: **50156** TestNo: **SM2540C** Analysis Date: **4/8/2015** SeqNo: **1974803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	2543.333	33						2513	1.19	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: *22-Apr-15*

CLIENT: CH2M HILL
Lab Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N015240-001

Client Sample ID: PE-01-229
Collection Date: 4/7/2015 1:00:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150408B**	QC Batch: **50155**				PrepDate	**4/8/2015**	Analyst: **JAA**
Calcium	110000	58	500		µg/L	1	4/8/2015 08:24 PM
Iron	ND	1.3	20		µg/L	1	4/8/2015 08:24 PM
Magnesium	23000	11	100		µg/L	1	4/8/2015 08:24 PM
Sodium	790000	3800	50000		µg/L	100	4/9/2015 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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150408B**	QC Batch: **50155**			PrepDate	**4/8/2015**		Analyst: **JAA**
Calcium	230000	58	500		µg/L	1	4/8/2015 08:30 PM
Iron	ND	1.3	20		µg/L	1	4/8/2015 08:30 PM
Magnesium	31000	11	100		µg/L	1	4/8/2015 08:30 PM
Sodium	1600000	3800	50000		µg/L	100	4/9/2015 05:28 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

Date: *22-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-50155** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99850**
Client ID: **PBW** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/9/2015** SeqNo: **1985067**

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

Sample ID **LCS2-50155** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99850**
Client ID: **LCSW** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/9/2015** SeqNo: **1985068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19714.764	500	20000	0	98.6	85	115				

Sample ID **N015240-001C-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99850**
Client ID: **ZZZZZZ** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/9/2015** SeqNo: **1985073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	762949.672	50000	20000	792900	-150	75	125				S

Sample ID **N015240-001C-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99850**
Client ID: **ZZZZZZ** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/9/2015** SeqNo: **1985074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	933806.359	50000	20000	792900	705	75	125	762900	20.1	20	SR

Sample ID **MB-50155** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99826**
Client ID: **PBW** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/8/2015** SeqNo: **1985137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	6.997	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: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS-50155** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99826**
Client ID: **LCSW** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/8/2015** SeqNo: **1985138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9190.163	500	10000	0	91.9	85	115				
Iron	109.693	20	100.0	0	110	85	115				
Magnesium	9586.315	100	10000	0	95.9	85	115				

Sample ID **N015239-001B-MS** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99826**
Client ID: **ZZZZZZ** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/8/2015** SeqNo: **1985142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	103051.315	500	10000	93220	98.3	75	125				
Iron	113.225	20	100.0	12.85	100	75	125				
Magnesium	25132.200	100	10000	15660	94.7	75	125				

Sample ID **N015239-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99826**
Client ID: **ZZZZZZ** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/8/2015** SeqNo: **1985143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	103497.284	500	10000	93220	103	75	125	103100	0.432	20	
Iron	107.563	20	100.0	12.85	94.7	75	125	113.2	5.13	20	
Magnesium	25269.366	100	10000	15660	96.1	75	125	25130	0.544	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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150408A** QC Batch: **50147** PrepDate **4/8/2015** Analyst: **CEI**							
Manganese	58	0.026	0.50		µg/L	1	4/8/2015 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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150408A**	QC Batch: **50147**				PrepDate	**4/8/2015**	Analyst: **CEI**
Manganese	ND	0.026	0.50		µg/L	1	4/8/2015 03:24 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

Date: *22-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-50147** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **PBW** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977876**

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

Sample ID **LCS-50147** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **LCSW** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.857	0.50	100.0	0	102	85	115				

Sample ID **N015230-001E-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **ZZZZZZ** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.820	0.50	100.0	4.677	93.1	75	125				

Sample ID **N015230-001E-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **ZZZZZZ** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.049	0.50	100.0	4.677	93.4	75	125	97.82	0.234	20	

Sample ID **N015233-001A-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **ZZZZZZ** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	126.582	0.50	100.0	32.96	93.6	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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150409A** QC Batch: **R99859** PrepDate							Analyst: **RB**
Hexavalent Chromium	3.6	0.015	0.20		µg/L	1	4/9/2015 01:48 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **ICP7_150408A** QC Batch: **50147** PrepDate **4/8/2015**							Analyst: **CEI**
Chromium	3.6	0.030	1.0		µg/L	1	4/8/2015 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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
SM 3500-CR B							
RunID: **WETCHEM_150420F** QC Batch: **R100033** PrepDate Analyst: **QBM**							
Chromium, Hexavalent	730	2.8	20		µg/L	2	4/20/2015
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **ICP7_150408A** QC Batch: **50147** PrepDate **4/8/2015** Analyst: **CEI**							
Chromium	730	0.15	5.0		µg/L	5	4/8/2015 04:05 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: *22-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-50147** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **PBW** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977819**

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

Sample ID **LCS-50147** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **LCSW** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.565	1.0	10.00	0	106	85	115				

Sample ID **N015230-001E-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **ZZZZZZ** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.934	1.0	10.00	0	99.3	75	125				

Sample ID **N015230-001E-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **ZZZZZZ** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.896	1.0	10.00	0	99.0	75	125	9.934	0.380	20	

Sample ID **N015233-001A-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/8/2015** RunNo: **99822**
Client ID: **ZZZZZZ** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.048	1.0	10.00	0.4991	95.5	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: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **MB-R99859** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **PBW** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975889**

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-R99859** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **LCSW** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.051	0.20	5.000	0	101	90	110				

Sample ID **N015256-001A-DUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **ZZZZZZ** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.707	0.20						1.663	2.64	20	

Sample ID **N015256-001A-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **ZZZZZZ** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.632	0.20	5.000	1.663	99.4	90	110				

Sample ID **N015256-001A-MSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **ZZZZZZ** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.716	0.20	5.000	1.663	101	90	110	6.632	1.27	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: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **N015241-002C-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **ZZZZZZ** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.153	0.20	1.000	0.1761	97.7	90	110				

Sample ID **N015240-001B-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **ZZZZZZ** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.376	0.20	5.000	3.570	96.1	90	110				

Sample ID **N015241-001C-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **ZZZZZZ** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1047.290	20	500.0	566.5	96.2	90	110				

Sample ID **N015241-003B-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **99859**
Client ID: **ZZZZZZ** Batch ID: **R99859** TestNo: **EPA 218.6** Analysis Date: **4/9/2015** SeqNo: **1975922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.720	1.0	5.000	0.5315	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: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R100033** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100033**
Client ID: **LCSW** Batch ID: **R100033** TestNo: **SM 3500-Cr B** Analysis Date: **4/20/2015** SeqNo: **1984377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	97.580	10	100.0	0	97.6	85	115				

Sample ID **MB-R100033** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100033**
Client ID: **PBW** Batch ID: **R100033** TestNo: **SM 3500-Cr B** Analysis Date: **4/20/2015** SeqNo: **1984378**

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

Sample ID **N015240-002BDUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100033**
Client ID: **ZZZZZZ** Batch ID: **R100033** TestNo: **SM 3500-Cr B** Analysis Date: **4/20/2015** SeqNo: **1984380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	727.320	20						731.3	0.542	20	

Sample ID **N015240-002BMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100033**
Client ID: **ZZZZZZ** Batch ID: **R100033** TestNo: **SM 3500-Cr B** Analysis Date: **4/20/2015** SeqNo: **1984381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1215.518	20	500.0	731.3	96.8	85	115				

Sample ID **N015240-002BMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100033**
Client ID: **ZZZZZZ** Batch ID: **R100033** TestNo: **SM 3500-Cr B** Analysis Date: **4/20/2015** SeqNo: **1984382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1216.906	20	500.0	731.3	97.1	85	115	1216	0.114	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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150413F**	QC Batch: **R99897**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	220	1.2	5.0		mg/L	1	4/13/2015 10:30 AM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	4/13/2015 10:30 AM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	4/13/2015 10:30 AM
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	4/13/2015 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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150413F**	QC Batch: **R99897**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	140	1.2	5.0		mg/L	1	4/13/2015 10:30 AM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	4/13/2015 10:30 AM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	4/13/2015 10:30 AM
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	4/13/2015 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		

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R99897** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99897**
Client ID: **LCSW** Batch ID: **R99897** TestNo: **SM 2320 B** Analysis Date: **4/13/2015** SeqNo: **1978056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	97.046	5.0	100.0	0	97.0	85	115				
Alkalinity, Total (As CaCO3)	99.156	5.0	100.0	0	99.2	85	115				

Sample ID **MB-R99897** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99897**
Client ID: **PBW** Batch ID: **R99897** TestNo: **SM 2320 B** Analysis Date: **4/13/2015** SeqNo: **1978057**

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 **N015240-001A DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99897**
Client ID: **ZZZZZZ** Batch ID: **R99897** TestNo: **SM 2320 B** Analysis Date: **4/13/2015** SeqNo: **1978059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	217.300	5.0						219.4	0.966	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)	217.300	5.0						219.4	0.966	30	

Sample ID **N015240-002A MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99897**
Client ID: **ZZZZZZ** Batch ID: **R99897** TestNo: **SM 2320 B** Analysis Date: **4/13/2015** SeqNo: **1978061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	242.616	5.0	100.0	143.5	99.2	75	125				
Alkalinity, Total (As CaCO3)	242.616	5.0	100.0	143.5	99.2	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: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N015240-002A MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **99897**
Client ID: **ZZZZZZ** Batch ID: **R99897** TestNo: **SM 2320 B** Analysis Date: **4/13/2015** SeqNo: **1978062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	242.616	5.0	100.0	143.5	99.2	75	125	242.6	0	20	
Alkalinity, Total (As CaCO3)	242.616	5.0	100.0	143.5	99.2	75	125	242.6	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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150408B** QC Batch: **R99831** PrepDate							Analyst: **QBM**
Chloride	1000	6.3	100		mg/L	200	4/9/2015 12:25 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150408B** QC Batch: **R99831** PrepDate							Analyst: **QBM**
Sulfate	360	1.6	25		mg/L	50	4/8/2015 11:56 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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150408B** QC Batch: **R99831** PrepDate Analyst: **QBM**							
Chloride	2400	16	250		mg/L	500	4/9/2015 02:08 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150408B** QC Batch: **R99831** PrepDate Analyst: **QBM**							
Sulfate	530	3.3	50		mg/L	100	4/9/2015 01:24 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: *22-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **LCS-R99831_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **LCSW** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/8/2015** SeqNo: **1975124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.485	0.50	2.500	0	99.4	90	110				

Sample ID **MB-R99831_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **PBW** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/8/2015** SeqNo: **1975125**

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

Sample ID **N015240-001ADUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **ZZZZZZ** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/9/2015** SeqNo: **1975129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1023.000	100						1043	1.92	20	

Sample ID **N015240-002AMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **ZZZZZZ** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/9/2015** SeqNo: **1975133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3703.000	250	1250	2380	106	80	120				

Sample ID **N015240-002AMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **ZZZZZZ** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/9/2015** SeqNo: **1975134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3753.500	250	1250	2380	110	80	120	3703	1.35	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: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **LCS-R99831_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **LCSW** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/8/2015** SeqNo: **1975141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.999	0.50	5.000	0	100	90	110				

Sample ID **MB-R99831_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **PBW** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/8/2015** SeqNo: **1975142**

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

Sample ID **N015240-001ADUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **ZZZZZZ** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/9/2015** SeqNo: **1975146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	369.300	25						356.6	3.50	20	

Sample ID **N015240-002AMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **ZZZZZZ** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/9/2015** SeqNo: **1975150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1024.200	50	500.0	528.2	99.2	80	120				

Sample ID **N015240-002AMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **99831**
Client ID: **ZZZZZZ** Batch ID: **R99831** TestNo: **EPA 300.0** Analysis Date: **4/9/2015** SeqNo: **1975151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1017.500	50	500.0	528.2	97.9	80	120	1024	0.656	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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150421B**	QC Batch: **R100030**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/21/2015

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: *22-Apr-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-229
Lab Order:	N015240	**Collection Date:**	4/7/2015 1:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015240-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150421B** QC Batch: **R100030** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	4/21/2015

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: *22-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100030** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100030**
Client ID: **PBW** Batch ID: **R100030** TestNo: **SM4500-NO3** Analysis Date: **4/21/2015** SeqNo: **1984349**

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-R100030** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100030**
Client ID: **LCSW** Batch ID: **R100030** TestNo: **SM4500-NO3** Analysis Date: **4/21/2015** SeqNo: **1984350**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.928	0.050	1.000	0	92.8	85	115				

Sample ID **N015240-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100030**
Client ID: **ZZZZZZ** Batch ID: **R100030** TestNo: **SM4500-NO3** Analysis Date: **4/21/2015** SeqNo: **1984352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.02230	0	20	

Sample ID **N015240-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100030**
Client ID: **ZZZZZZ** Batch ID: **R100030** TestNo: **SM4500-NO3** Analysis Date: **4/21/2015** SeqNo: **1984353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.960	0.050	1.000	0.02230	93.8	75	125				

Sample ID **N015240-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100030**
Client ID: **ZZZZZZ** Batch ID: **R100030** TestNo: **SM4500-NO3** Analysis Date: **4/21/2015** SeqNo: **1984354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.030	0.050	1.000	0.02230	101	75	125	0.9603	6.98	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		

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"

WORK ORDER: N015240

ANALYST LIST

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0, SM 3500-Cr B
Claire Ignacio	EPA 200.8
Jasper Aquino	EPA 200.7
Lilia Ramit	EPA 120.1, SM 2540C, SM 4500 H+B, SM 2320B
Ryan Balilu	EPA 218.6, SM 4500-NO3F

CH2MHILL

CHAIN OF CUSTODY RECORD

4/6/2015 8:22:09 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-229
Turnaround Time 10 Days
Shipping Date: 4/7/2015
COC Number: 229

			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 (E150.1)	SM3500-Cr6 LabFilt	TDS (SM2540C)		Number of Containers	COMMENTS
PE-01-229	4/7/2015	1300	Water	X	X	X	X	X	X	X	X		X	N015240-1	4	✓
TW-03D-229	4/7/2015	1300	Water	X	X	X	X	X		X	X	X	X	1 -2	4	✓
														TOTAL NUMBER OF CONTAINERS	8	

	Signatures	Date/Time
Approved by		
Sampled by	Chris Lentz & Josh Rosenberg	4-7-15
Relinquished by	[signature]	13:15
Received by	[signature]	4/7/15 1815
Relinquished by	[signature]	4/7/15 1945
Received by	[signature]	

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 1-6°C
Airbill No: IR#7
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:	4/7/2015	Workorder:	N015240
Rep sample Temp (Deg C):	1.6	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.
Samples for metals are lab filtered and preserved.
Samples for Nitrate/Nitrite are lab preserved.

Checklist Completed By: HG 4/15/2015

Reviewed By: 04/17/15

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 **N015240-001A,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(63.0467-62.9713)*1000000}{30}$$

$$= 2513.333 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2500 mg/L

Julia Ramit 4/10/2015

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:4/9/15								
MB-50156	100	54.6172	54.6175	3	1	3		
LCS-50156	100	75.7421	75.8422	1001	1	1001		
N015234-002D	75	61.3424	61.4158	734	1.33333333	978.666667	1609	0.608
N015234-003D	30	53.9169	54.0292	1123	3.33333333	3743.33333	4650	0.805
N015234-004D	10	55.1278	55.2171	893	10	8930	10760	0.830
N015234-005D	10	57.0813	57.1701	888	10	8880	10870	0.817
N015239-001C	100	53.7167	53.7856	689	1	689	1088	0.633
N015240-001A	30	62.9713	63.0467	754	3.33333333	2513.33333	4250	0.591
N015240-001A DUP	30	55.5402	55.6165	763	3.33333333	2543.33333	4250	0.598
N015240-002A	20	53.9476	54.0423	947	5	4735	8360	0.566
N015241-001B	20	61.2399	61.327	871	5	4355	7560	0.576
N015241-002B	20	55.7206	55.8079	873	5	4365	7710	0.566
N015241-003A	2	64.0889	64.1273	384	50	19200	32800	0.585

Silia Ramit 4/10/2015

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 **N015240-002C**, the concentration in ug/L is calculated as follows:

Calcium, ug/L = 227.9812069 * 1 * (25/25) * 1000

= 227981.2069

Reporting results in two significant figures,

Calcium, ug/L = 230000

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015240
Test Method: EPA 200.7
Analysis Date: 04/08/15

Matrix: Water
Batch No.: 50155

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

Comments:

Analyzed By: Jasper A Aquino

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

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015239-001B-DT 5X	Calcium	µg/L	101944.7585	PASS	93223.73393	9.35%	10
N015239-001B-DT 5X	Iron	µg/L	47.30960788	NA	12.84858491	268.21%	10
N015239-001B-DT 5X	Magnesium	µg/L	17223.13332	PASS	15664.12937	9.95%	10

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015240
Test Method: EPA 200.7
Analysis Date: 04/09/15

Matrix: Water
Batch No.: 50155

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

Comments:

Analyzed By: Jasper A Aquino

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015240-001C-DT 500X	Sodium	µg/L	799691.821	PASS	792889.4766	0.86%	10

ASSET Laboratories

Date: *12-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658271.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPPB

Sample ID: **N015239-001B-PS** SampType: **PS** TestCode: **200.7_WPGE** Units: **µg/L** Prep Date: RunNo: **99826**
Client ID: **ZZZZZZ** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/8/2015** SeqNo: **1974331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	102258.813	500	10000	93220	90.4	80	120				
Iron	106.749	20	100.0	12.85	93.9	80	120				
Magnesium	24854.337	100	10000	15660	91.9	80	120				

Sample ID: **N015240-001C-PS** SampType: **PS** TestCode: **200.7_WPGE** Units: **µg/L** Prep Date: RunNo: **99850**
Client ID: **ZZZZZZ** Batch ID: **50155** TestNo: **EPA 200.7** Analysis Date: **4/9/2015** SeqNo: **1975243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	824374.297	50000	20000	792900	157	80	120				S

DT of Na @500x is within criteria.

Nancy 4/21/2015

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	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 **N015240-001C,** the concentration in ug/L is calculated as follows:

Manganese, ug/L = 57.5365594818022 * 1 * (25/25)

= 57.5365594818022

Reporting results in two significant figures,

Manganese, ug/L = 58

Nancy 4/21/2015

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015240
Test Method: EPA 200.8
Analysis Date: 4/8/2015

Matrix: Water
Batch No.: 50147

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Mn. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015230-001E-DT 5X	Chromium	µg/L	0	NA	0		10
N015230-001E-DT 5X	Manganese	µg/L	4.90600462	NA	4.677045051	4.90%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *13-Apr-15*

CLIENT: CH2M HILL
Work Order: N015240
Project: PG&E Topock, 658271.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **N015230-001E-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **99822**
Client ID: **ZZZZZZ** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.757	0.50	100.0	4.677	93.1	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: N015240
Project: PG&E Topock, 658271.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID: **N015230-001E-PS** SampType: **PS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **99822**
Client ID: **ZZZZZZ** Batch ID: **50147** TestNo: **EPA 200.8** Analysis Date: **4/8/2015** SeqNo: **1977823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.884	1.0	10.00	0	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		

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 **N015240-001B,** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 3.5696 * 1

= 3.5696

Reporting result in two significant figures,

Cr^{+6}, µg/L = 3.6

Sample ID: **N015240-001A @ pH 7.83**

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) (11.85 mL)

= **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 = (10.4) (0.021097 N) (1) * 1000

= 219.4088 **mg/L**

Reporting results in two significant figures,

= 220 **mg/L** as CaCO3

Julia Ramit 4/14/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

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

= (0) (0.02358 N) (1) * 1000

= **0**

Total Alkalinity

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

= (10.4 mL) (0.021097) (1) * 1000

= 220 **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 $CaCO_3$ = 220 **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**

Julia Ramit 4/14/2015

Sample Calculation

METHOD: EPA 300.0
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 **N015240-001A** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.214 * 200

= 1042.8

Reporting results in two significant figures,

Chloride, mg/L = 1000

4/20/2015

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 **N015240-002B,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 365.637 * 2

= 731.274 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 730

4/21/2015

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 **N015240-002D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6761* 5

= 3.3805 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 3.4 mg/L

May 05, 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.: N015411

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 21, 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: N015411

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 218.6:

Because the results for total dissolved chromium (5.7 ug/L) and hexavalent chromium (7.7 ug/L) for sample N015411-002 (MW-125-203) are discrepant,sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (5.4 ug/L) and hexavalent chromium (7.6 ug/L) for sample N015411-009 (MW-34-100-203) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0.22 ug/L) for sample N015411-010 (MW-42-055-203) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Dilution was necessary for samples N015411-002A (MW-125-203) & N015411-009A (MW-34-100-203) due to matrix interference. Samples were analyzed at lower dilution however retention time criteria was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on Selenium for sample N015411-001 due to matrix spike duplicate not meeting internal standard criteria possibly due to matrix interference. Matrix spike duplicate was analyzed with dilution and internal standard met method criteria. Sample was reported at dilution that meet matrix spike/matrix spike duplicate internal standard recovery limit.

CASE NARRATIVE

Dilution was necessary on Selenium for sample N015411-009 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 analyte for this failed internal standard was reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (5.7 ug/L) and hexavalent chromium (7.7 ug/L) for sample N015411-002 (MW-125-203) 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 6.1 and 5.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (5.4 ug/L) and hexavalent chromium (7.6 ug/L) for sample N015411-009 (MW-34-100-203) 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 5.7 and 5.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0.226 ug/L) for sample N015411-010 (MW-42-055-203) 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 1.7 and 2.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C. Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
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: *05-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015411
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015411-001A	MW-123-203	Water	4/20/2015 8:00:00 AM	4/21/2015	5/5/2015
N015411-001B	MW-123-203	Water	4/20/2015 8:00:00 AM	4/21/2015	5/5/2015
N015411-001C	MW-123-203	Water	4/20/2015 8:00:00 AM	4/21/2015	5/5/2015
N015411-001D	MW-123-203	Water	4/20/2015 8:00:00 AM	4/21/2015	5/5/2015
N015411-001E	MW-123-203	Water	4/20/2015 8:00:00 AM	4/21/2015	5/5/2015
N015411-002A	MW-125-203	Water	4/20/2015 7:00:00 AM	4/21/2015	5/5/2015
N015411-002B	MW-125-203	Water	4/20/2015 7:00:00 AM	4/21/2015	5/5/2015
N015411-002C	MW-125-203	Water	4/20/2015 7:00:00 AM	4/21/2015	5/5/2015
N015411-003A	MW-27-085-203	Water	4/20/2015 3:24:00 PM	4/21/2015	5/5/2015
N015411-003B	MW-27-085-203	Water	4/20/2015 3:24:00 PM	4/21/2015	5/5/2015
N015411-003C	MW-27-085-203	Water	4/20/2015 3:24:00 PM	4/21/2015	5/5/2015
N015411-003D	MW-27-085-203	Water	4/20/2015 3:24:00 PM	4/21/2015	5/5/2015
N015411-003E	MW-27-085-203	Water	4/20/2015 3:24:00 PM	4/21/2015	5/5/2015
N015411-004A	MW-27-085-203-EB	Water	4/20/2015 11:52:00 AM	4/21/2015	5/5/2015
N015411-004B	MW-27-085-203-EB	Water	4/20/2015 11:52:00 AM	4/21/2015	5/5/2015
N015411-005A	MW-32-035-203	Water	4/20/2015 2:22:00 PM	4/21/2015	5/5/2015
N015411-005B	MW-32-035-203	Water	4/20/2015 2:22:00 PM	4/21/2015	5/5/2015
N015411-005C	MW-32-035-203	Water	4/20/2015 2:22:00 PM	4/21/2015	5/5/2015
N015411-005D	MW-32-035-203	Water	4/20/2015 2:22:00 PM	4/21/2015	5/5/2015
N015411-006A	MW-32-035-203-EB	Water	4/20/2015 1:50:00 PM	4/21/2015	5/5/2015
N015411-006B	MW-32-035-203-EB	Water	4/20/2015 1:50:00 PM	4/21/2015	5/5/2015
N015411-007A	MW-34-080-203	Water	4/20/2015 11:42:00 AM	4/21/2015	5/5/2015
N015411-007B	MW-34-080-203	Water	4/20/2015 11:42:00 AM	4/21/2015	5/5/2015
N015411-007C	MW-34-080-203	Water	4/20/2015 11:42:00 AM	4/21/2015	5/5/2015
N015411-007D	MW-34-080-203	Water	4/20/2015 11:42:00 AM	4/21/2015	5/5/2015
N015411-008A	MW-34-080-203-EB	Water	4/20/2015 11:00:00 AM	4/21/2015	5/5/2015
N015411-008B	MW-34-080-203-EB	Water	4/20/2015 11:00:00 AM	4/21/2015	5/5/2015
N015411-009A	MW-34-100-203	Water	4/20/2015 12:22:00 PM	4/21/2015	5/5/2015
N015411-009B	MW-34-100-203	Water	4/20/2015 12:22:00 PM	4/21/2015	5/5/2015

CLIENT:	CH2M HILL
Project:	PG&E Topock
Lab Order:	N015411
Contract No:	2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015411-009C	MW-34-100-203	Water	4/20/2015 12:22:00 PM	4/21/2015	5/5/2015
N015411-010A	MW-42-055-203	Water	4/20/2015 10:02:00 AM	4/21/2015	5/5/2015
N015411-010B	MW-42-055-203	Water	4/20/2015 10:02:00 AM	4/21/2015	5/5/2015
N015411-010C	MW-42-055-203	Water	4/20/2015 10:02:00 AM	4/21/2015	5/5/2015
N015411-011A	MW-42-055-203-EB	Water	4/20/2015 9:05:00 AM	4/21/2015	5/5/2015
N015411-011B	MW-42-055-203-EB	Water	4/20/2015 9:05:00 AM	4/21/2015	5/5/2015
N015411-012A	MW-42-065-203	Water	4/20/2015 10:38:00 AM	4/21/2015	5/5/2015
N015411-012B	MW-42-065-203	Water	4/20/2015 10:38:00 AM	4/21/2015	5/5/2015
N015411-012C	MW-42-065-203	Water	4/20/2015 10:38:00 AM	4/21/2015	5/5/2015
N015411-013A	MW-42-065-203-EB	Water	4/20/2015 9:10:00 AM	4/21/2015	5/5/2015
N015411-013B	MW-42-065-203-EB	Water	4/20/2015 9:10:00 AM	4/21/2015	5/5/2015

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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150423A**	QC Batch:	**R100086**		PrepDate			**Analyst: RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/23/2015 01:46 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch:	**50277**		PrepDate		**4/23/2015**	**Analyst: CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 03:04 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150423A**	QC Batch: **R100086**			PrepDate			Analyst: **RB**
Hexavalent Chromium	7.7	0.075	1.0		µg/L	5	4/23/2015 05:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	5.7	0.086	1.0		µg/L	1	4/23/2015 03:21 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 3:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150423A	QC Batch: R100086			PrepDate			Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/23/2015 03:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 03:32 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150423A**	QC Batch: **R100086**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/23/2015 03:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 03:43 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 11:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150423A** QC Batch: **R100086** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/23/2015 03:41 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150423A** QC Batch: **50277** PrepDate **4/23/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 04:06 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

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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150423B**	QC Batch:	**R100087**		PrepDate			Analyst: **RB**
Hexavalent Chromium	7.6	0.075	1.0		µg/L	5	4/23/2015 09:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch:	**50277**		PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	5.4	0.086	1.0		µg/L	1	4/23/2015 04:17 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-055-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 10:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150423A**	QC Batch: **R100086**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.22	0.015	0.20		µg/L	1	4/23/2015 04:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	1.7	0.086	1.0		µg/L	1	4/23/2015 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150423A**	QC Batch: **R100086**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/23/2015 04:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 04:39 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

Date: *05-May-15*

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R100086	MBLK	218.6_WPGE	µg/L		100086
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
PBW	R100086	EPA 218.6		4/23/2015	1987225

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-R100086	LCS	218.6_WPGE	µg/L		100086
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
LCSW	R100086	EPA 218.6		4/23/2015	1987226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015411-001A-DUP	DUP	218.6_WPGE	µg/L		100086
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100086	EPA 218.6		4/23/2015	1987228

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015411-001A-MS	MS	218.6_WPGE	µg/L		100086
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100086	EPA 218.6		4/23/2015	1987229

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0	105	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015411-001A-MSD	MSD	218.6_WPGE	µg/L		100086
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100086	EPA 218.6		4/23/2015	1987230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.018	0.20	1.000	0	102	90	110	1.055	3.51	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015411-003A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100086
Client ID:	ZZZZZZ	Batch ID: R100086	TestNo: EPA 218.6		Analysis Date: 4/23/2015	SeqNo: 1987234

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.039	0.20	1.000	0	104	90	110				

Sample ID	N015411-006A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100086
Client ID:	ZZZZZZ	Batch ID: R100086	TestNo: EPA 218.6		Analysis Date: 4/23/2015	SeqNo: 1987236

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	0.08120	103	90	110				

Sample ID	N015411-007A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100086
Client ID:	ZZZZZZ	Batch ID: R100086	TestNo: EPA 218.6		Analysis Date: 4/23/2015	SeqNo: 1987238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.134	0.20	1.000	0.1232	101	90	110				

Sample ID	N015411-010A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100086
Client ID:	ZZZZZZ	Batch ID: R100086	TestNo: EPA 218.6		Analysis Date: 4/23/2015	SeqNo: 1987240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.261	0.20	1.000	0.2192	104	90	110				

Sample ID	N015411-012A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100086
Client ID:	ZZZZZZ	Batch ID: R100086	TestNo: EPA 218.6		Analysis Date: 4/23/2015	SeqNo: 1987244

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.053	0.20	1.000	0.04910	100	90	110				

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015411-002A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100086
Client ID:	ZZZZZZ	Batch ID:	R100086	TestNo:	EPA 218.6			Analysis Date:	4/23/2015	SeqNo:	1987249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.529	1.0	5.000	7.666	97.3	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: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R100087	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100087
Client ID:	PBW	Batch ID:	R100087	TestNo:	EPA 218.6			Analysis Date:	4/23/2015	SeqNo:	1987258

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-R100087	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100087
Client ID:	LCSW	Batch ID:	R100087	TestNo:	EPA 218.6			Analysis Date:	4/23/2015	SeqNo:	1987259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.921	0.20	5.000	0	98.4	90	110				

Sample ID	N015367-016A-DUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100087
Client ID:	ZZZZZZ	Batch ID:	R100087	TestNo:	EPA 218.6			Analysis Date:	4/23/2015	SeqNo:	1987261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	81.520	2.0						82.14	0.756	20	

Sample ID	N015367-016A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100087
Client ID:	ZZZZZZ	Batch ID:	R100087	TestNo:	EPA 218.6			Analysis Date:	4/23/2015	SeqNo:	1987262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	131.064	2.0	50.00	82.14	97.9	90	110				

Sample ID	N015367-016A-MSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100087
Client ID:	ZZZZZZ	Batch ID:	R100087	TestNo:	EPA 218.6			Analysis Date:	4/23/2015	SeqNo:	1987263

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	130.415	2.0	50.00	82.14	96.6	90	110	131.1	0.496	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015411-009A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100087
Client ID:	ZZZZZZ	Batch ID:	R100087	TestNo:	EPA 218.6			Analysis Date:	4/23/2015	SeqNo:	1987271

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	31.583	1.0	25.00	7.590	96.0	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: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-50277	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	PBW	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987841

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

Sample ID	LCS-50277	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	LCSW	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987842

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.007	1.0	10.00	0	100	85	115				

Sample ID	N015411-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7.942	1.0	10.00	0	79.4	75	125				

Sample ID	N015411-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987885

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7.981	1.0	10.00	0	79.8	75	125	7.942	0.497	20	

Sample ID	N015412-007B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.780	1.0	10.00	0	87.8	75	125				

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150422A**	QC Batch: **R100050**			PrepDate			Analyst: **QBM**
Fluoride	2.2	0.062	0.50		mg/L	5	4/22/2015 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 3:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150422A**	QC Batch: **R100050**			PrepDate			Analyst: **QBM**
Fluoride	2.4	0.062	0.50		mg/L	5	4/22/2015 03:04 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

Date: *05-May-15*

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R100050_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	PBW	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R100050_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	LCSW	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.474	0.10	2.500	0	99.0	90	110				

Sample ID	N015411-001DDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	ZZZZZZ	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986061

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.200	0.50						2.185	0.684	20	

Sample ID	N015411-003DMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	ZZZZZZ	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986062

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.340	0.50	12.50	2.385	87.6	80	120				

Sample ID	N015411-003DMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	ZZZZZZ	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.370	0.50	12.50	2.385	87.9	80	120	13.34	0.225	20	

Qualifiers:

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

ASSET LABORATORIES
CALIFORNIA
11260 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7475 F: 562.219.7416
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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/30/2015

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

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.056	0.022	0.050		mg/L	1	4/30/2015

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

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 3:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/30/2015

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

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430I**	QC Batch: **R100190**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.3	0.11	0.25		mg/L	5	4/30/2015

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

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 11:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/30/2015

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

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/30/2015

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		

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R100189	MBLK	4500N03F_W	mg/L		100189
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
PBW	R100189	SM4500-NO3		4/30/2015	1991921

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	SampType	TestCode	Units	Prep Date	RunNo
LCS-R100189	LCS	4500N03F_W	mg/L		100189
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
LCSW	R100189	SM4500-NO3		4/30/2015	1991922

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.042	0.050	1.000	0	104	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015411-001EDUP	DUP	4500N03F_W	mg/L		100189
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100189	SM4500-NO3		4/30/2015	1991924

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	SampType	TestCode	Units	Prep Date	RunNo
N015411-001EMS	MS	4500N03F_W	mg/L		100189
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100189	SM4500-NO3		4/30/2015	1991927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.983	0.050	1.000	0	98.3	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015411-001EMSD	MSD	4500N03F_W	mg/L		100189
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100189	SM4500-NO3		4/30/2015	1991928

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.998	0.050	1.000	0	99.8	75	125	0.9829	1.48	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R100190	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100190
Client ID:	PBW	Batch ID:	R100190	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991946

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-100190	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100190
Client ID:	LCSW	Batch ID:	R100190	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991947

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.992	0.050	1.000	0	99.2	85	115				

Sample ID	N015411-005DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100190
Client ID:	ZZZZZZ	Batch ID:	R100190	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.178	0.25						2.327	6.64	20	

Sample ID	N015411-005DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100190
Client ID:	ZZZZZZ	Batch ID:	R100190	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.140	0.25	5.000	2.327	116	75	125				

Sample ID	N015411-005DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100190
Client ID:	ZZZZZZ	Batch ID:	R100190	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.997	0.25	5.000	2.327	93.4	75	125	8.140	15.1	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-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-123-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Arsenic	1.0	0.016	0.10		µg/L	1	4/23/2015 03:04 PM
Manganese	18	0.023	0.50		µg/L	1	4/23/2015 03:04 PM
Molybdenum	15	0.029	0.50		µg/L	1	4/23/2015 03:04 PM
Selenium	ND	0.35	2.5		µg/L	5	4/23/2015 02:59 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-125-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Arsenic	0.86	0.016	0.10		µg/L	1	4/23/2015 03:21 PM
Manganese	ND	0.023	0.50		µg/L	1	4/23/2015 03:21 PM
Molybdenum	30	0.029	0.50		µg/L	1	4/23/2015 03:21 PM
Selenium	ND	0.070	0.50		µg/L	1	4/23/2015 03:21 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 3:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Arsenic	1.0	0.016	0.10		µg/L	1	4/23/2015 03:32 PM
Manganese	18	0.023	0.50		µg/L	1	4/23/2015 03:32 PM
Molybdenum	15	0.029	0.50		µg/L	1	4/23/2015 03:32 PM
Selenium	ND	0.070	0.50		µg/L	1	4/23/2015 03:32 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-32-035-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Arsenic	2.3	0.016	0.10		µg/L	1	4/23/2015 03:43 PM
Manganese	310	0.11	2.5		µg/L	5	4/23/2015 03:38 PM
Molybdenum	9.7	0.029	0.50		µg/L	1	4/23/2015 03:43 PM
Selenium	ND	0.070	0.50		µg/L	1	4/23/2015 03:43 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 11:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277				PrepDate	4/23/2015	Analyst: CEI
Arsenic	1.3	0.016	0.10		µg/L	1	4/23/2015 04:06 PM
Manganese	ND	0.023	0.50		µg/L	1	4/23/2015 04:06 PM
Molybdenum	11	0.029	0.50		µg/L	1	4/23/2015 04:06 PM
Selenium	ND	0.070	0.50		µg/L	1	4/23/2015 04:06 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-100-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 12:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Arsenic	0.84	0.016	0.10		µg/L	1	4/23/2015 04:17 PM
Manganese	ND	0.023	0.50		µg/L	1	4/23/2015 04:17 PM
Molybdenum	28	0.029	0.50		µg/L	1	4/23/2015 04:17 PM
Selenium	ND	0.35	2.5		µg/L	5	4/23/2015 04:11 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-055-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 10:02:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277				PrepDate	4/23/2015	Analyst: CEI
Arsenic	21	0.016	0.10		µg/L	1	4/23/2015 04:28 PM
Manganese	12	0.023	0.50		µg/L	1	4/23/2015 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-203
Lab Order:	N015411	**Collection Date:**	4/20/2015 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015411-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277				PrepDate	4/23/2015	Analyst: CEI
Arsenic	3.2	0.016	0.10		µg/L	1	4/23/2015 04:39 PM
Manganese	680	0.11	2.5		µg/L	5	4/23/2015 04:33 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: *05-May-15*

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-50277	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	PBW	Batch ID:	50277	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/23/2015	SeqNo:	1987938

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-50277	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	LCSW	Batch ID:	50277	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/23/2015	SeqNo:	1987939

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.594	0.10	10.00	0	95.9	85	115				
Manganese	97.132	0.50	100.0	0	97.1	85	115				
Molybdenum	9.986	0.50	10.00	0	99.9	85	115				
Selenium	9.300	0.50	10.00	0	93.0	85	115				

Sample ID	N015411-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/23/2015	SeqNo:	1987979

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.943	2.5	10.00	0.4726	84.7	75	125				

Sample ID	N015411-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/23/2015	SeqNo:	1987980

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.006	0.10	10.00	1.021	89.9	75	125				
Manganese	97.671	0.50	100.0	18.43	79.2	75	125				
Molybdenum	26.115	0.50	10.00	14.72	114	75	125				

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015411-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987981

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.139	2.5	10.00	0.4726	76.7	75	125	8.943	9.41	20	

Sample ID	N015411-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987982

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.856	0.10	10.00	1.021	88.4	75	125	10.01	1.51	20	
Manganese	97.836	0.50	100.0	18.43	79.4	75	125	97.67	0.169	20	
Molybdenum	26.207	0.50	10.00	14.72	115	75	125	26.11	0.353	20	

Sample ID	N015412-007B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	374.650	2.5	100.0	283.7	91.0	75	125				

Sample ID	N015412-007B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987984

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.133	0.10	10.00	6.806	93.3	75	125				
Molybdenum	32.516	0.50	10.00	22.12	104	75	125				
Selenium	11.856	0.50	10.00	2.808	90.5	75	125				

Qualifiers:

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

CH2MHILL

CHAIN OF CUSTODY RECORD

4/21/2015 2:34:23 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 4/21/2015
COC Number: 3

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter 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	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	NA	NA			
			Holding Time:	28	28	180	180	180	180	7	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Fluoride	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-123-203	4/20/2015	8:00	Water		x	x	x	x	x	x	x	N015411-1	6	
MW-125-203	4/20/2015	7:00	Water	x		x	x	x			x	-2	3	
MW-27-085-203	4/20/2015	15:24	Water		x	x	x	x	x	x	x	-3	6	
MW-27-085-203-EB	4/20/2015	11:52	Water	x			x					-4	2	Hold
MW-32-035-203	4/20/2015	14:22	Water		x	x	x	x	x		x	-5	5	
MW-32-035-203-EB	4/20/2015	13:50	Water	x			x					-6	2	Hold
MW-34-080-203	4/20/2015	11:42	Water		x	x	x	x	x		x	-7	5	
MW-34-080-203-EB	4/20/2015	11:00	Water	x			x					-8	2	Hold
MW-34-100-203	4/20/2015	12:22	Water	x		x	x	x			x	-9	3	
MW-42-055-203	4/20/2015	10:02	Water		x	x	x		x			10	4	
MW-42-055-203-EB	4/20/2015	9:05	Water	x			x					-11	2	Hold
MW-42-065-203	4/20/2015	10:38	Water		x	x	x		x			-12	4	
MW-42-065-203-EB	4/20/2015	9:10	Water	x			x					-13	2	Hold

	Signatures	Date/Time
Approved by		4-21-15
Sampled by		1440
Relinquished by		
Received by		4/21/15 1440
Relinquished by		4/21/15 1648
Received by		4/21/15

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1-6°C, 1.9°C, 2.1°C
Airbill No: 1442
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
April 7 - May 14, 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:	4/21/2015	Workorder:	N015411
Rep sample Temp (Deg C):	1.6/1.9/2.1	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 4/24/2015

Reviewed By: 04/27/15

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:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

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

For **N015411-010A** concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.2192 * 1$$

$$= 0.2192$$

Reporting result in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 0.22}$$

Sample Calculation

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

FORMULA:

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

Fluoride, mg/L = A * DF

where:

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

For **N015411-001D** concentration in mg/L is calculated as follows:

Fluoride, mg/L = 0.437 * 5

= 2.185

Reporting results in two significant figures,

Fluoride, mg/L = 2.2

Nancy 5/5/2015

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 **N015411-005D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4654 * 5

= 2.327 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 2.3 mg/L

REB 5/5/2015

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 **N015411-001B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 1.02074276761687 * 1 * (25/25)

= 1.02074276761687

Reporting results in two significant figures,

Arsenic, ug/L = 1.0

ASSET Laboratories

ICP-Metals In Water

Dilution Test Summary

Work Order No.: N015411
Test Method: EPA 6020
Analysis Date: 4/23/2015

Matrix: Water
Batch No.: 50277

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr and Se. The calculated concentrations are < 25X RL's.
Dilution test failed to Mn.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015411-001B-DT 5X	Arsenic	µg/L	1.200449778	NA	1.020742768	17.61%	10
N015411-001B-DT 5X	Chromium	µg/L	0	NA	0		10
N015411-001B-DT 5X	Manganese	µg/L	24.88624211	FAIL	18.43315442	35.01%	10
N015411-001B-DT 5X	Molybdenum	µg/L	16.17365098	PASS	14.71740254	9.89%	10
N015411-001B-DT 25X	Selenium	µg/L	0	NA	0.472617024	100.00%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *29-Apr-15*

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015411-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987975

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.560	2.5	10.00	0.4726	90.9	80	120				

Sample ID	N015411-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987978

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.898	0.10	10.00	1.021	88.8	80	120				
Manganese	96.432	0.50	100.0	18.43	78.0	80	120				S
Molybdenum	25.337	0.50	10.00	14.72	106	80	120				

MS/MSD for all analytes are within criteria.

5/5/2015

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		

CLIENT: CH2M HILL
Work Order: N015411
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N015411-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/23/2015	SeqNo:	1987881

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7.971	1.0	10.00	0	79.7	80	120				S

MS/MSD for all analytes are within criteria

5/5/2015

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		

May 05, 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.: N015412

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 21, 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: N015412

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 218.6:

Because the results for total dissolved chromium (5.9 ug/L) and hexavalent chromium (7.4 ug/L) for sample N015412-009A (MW-39-100-203) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (9.4 ug/L) and hexavalent chromium (13 ug/L) for sample N015412-010A (MW-46-175-203) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Dilution was necessary for samples N015412-010A (MW-46-175-203) & N015412-011A (MW-46-205-203) due to matrix interference. Samples were analyzed at lower dilution however, matrix spike was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (5.9 ug/L) and hexavalent chromium (7.4 ug/L) for sample N015412-009 (MW-39-100-203) 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 6.0 and 6.4 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (9.4 ug/L) and hexavalent chromium (13 ug/L) for sample N015412-010 (MW-46-175-203) 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 10 and 10 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *05-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015412
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015412-001A	MW-201-203	Water	4/21/2015 6:40:00 AM	4/21/2015	5/5/2015
N015412-002A	MW-202-203	Water	4/21/2015 2:24:00 PM	4/21/2015	5/5/2015
N015412-003A	MW-28-025-203	Water	4/21/2015 8:00:00 AM	4/21/2015	5/5/2015
N015412-003B	MW-28-025-203	Water	4/21/2015 8:00:00 AM	4/21/2015	5/5/2015
N015412-003C	MW-28-025-203	Water	4/21/2015 8:00:00 AM	4/21/2015	5/5/2015
N015412-003D	MW-28-025-203	Water	4/21/2015 8:00:00 AM	4/21/2015	5/5/2015
N015412-004A	MW-28-025-203-EB	Water	4/21/2015 7:26:00 AM	4/21/2015	5/5/2015
N015412-004B	MW-28-025-203-EB	Water	4/21/2015 7:26:00 AM	4/21/2015	5/5/2015
N015412-005A	MW-28-090-203	Water	4/21/2015 8:38:00 AM	4/21/2015	5/5/2015
N015412-005B	MW-28-090-203	Water	4/21/2015 8:38:00 AM	4/21/2015	5/5/2015
N015412-005C	MW-28-090-203	Water	4/21/2015 8:38:00 AM	4/21/2015	5/5/2015
N015412-005D	MW-28-090-203	Water	4/21/2015 8:38:00 AM	4/21/2015	5/5/2015
N015412-005E	MW-28-090-203	Water	4/21/2015 8:38:00 AM	4/21/2015	5/5/2015
N015412-006A	MW-28-090-203-EB	Water	4/21/2015 7:28:00 AM	4/21/2015	5/5/2015
N015412-006B	MW-28-090-203-EB	Water	4/21/2015 7:28:00 AM	4/21/2015	5/5/2015
N015412-007A	MW-29-203	Water	4/21/2015 12:38:00 PM	4/21/2015	5/5/2015
N015412-007B	MW-29-203	Water	4/21/2015 12:38:00 PM	4/21/2015	5/5/2015
N015412-007C	MW-29-203	Water	4/21/2015 12:38:00 PM	4/21/2015	5/5/2015
N015412-007D	MW-29-203	Water	4/21/2015 12:38:00 PM	4/21/2015	5/5/2015
N015412-008A	MW-29-203-EB	Water	4/21/2015 12:02:00 PM	4/21/2015	5/5/2015
N015412-008B	MW-29-203-EB	Water	4/21/2015 12:02:00 PM	4/21/2015	5/5/2015
N015412-009A	MW-39-100-203	Water	4/21/2015 1:34:00 PM	4/21/2015	5/5/2015
N015412-009B	MW-39-100-203	Water	4/21/2015 1:34:00 PM	4/21/2015	5/5/2015
N015412-009C	MW-39-100-203	Water	4/21/2015 1:34:00 PM	4/21/2015	5/5/2015
N015412-010A	MW-46-175-203	Water	4/21/2015 9:42:00 AM	4/21/2015	5/5/2015
N015412-010B	MW-46-175-203	Water	4/21/2015 9:42:00 AM	4/21/2015	5/5/2015
N015412-010C	MW-46-175-203	Water	4/21/2015 9:42:00 AM	4/21/2015	5/5/2015
N015412-011A	MW-46-205-203	Water	4/21/2015 10:12:00 AM	4/21/2015	5/5/2015
N015412-011B	MW-46-205-203	Water	4/21/2015 10:12:00 AM	4/21/2015	5/5/2015

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-201-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 6:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150427A	QC Batch: R100105			PrepDate			Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/27/2015 04:00 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

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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-202-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 2:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150427A**	QC Batch: **R100105**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/27/2015 04:39 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150427A**	QC Batch: **R100105**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/27/2015 05:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 8:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150427A**	QC Batch: **R100105**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/27/2015 05:36 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 12:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150427A	QC Batch: R100105			PrepDate			Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	4/27/2015 05:55 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 05:23 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 1:34:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150427A**	QC Batch:	**R100105**		PrepDate			Analyst: **RB**
Hexavalent Chromium	7.4	0.015	0.20		µg/L	1	4/27/2015 08:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch:	**50277**		PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	5.9	0.086	1.0		µg/L	1	4/23/2015 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 9:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150427A**	QC Batch:	**R100105**		PrepDate			Analyst: **RB**
Hexavalent Chromium	13	0.075	1.0		µg/L	5	4/27/2015 06:35 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150423A**	QC Batch:	**50277**		PrepDate		**4/23/2015**	Analyst: **CEI**
Chromium	9.4	0.086	1.0		µg/L	1	4/23/2015 05:45 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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-205-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 10:12:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150427A	QC Batch: R100105			PrepDate			Analyst: RB
Hexavalent Chromium	1.4	0.075	1.0		µg/L	5	4/27/2015 09:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	4/23/2015 05:57 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: *05-May-15*

CLIENT: CH2M HILL
Work Order: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R100105	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100105
Client ID:	PBW	Batch ID:	R100105	TestNo:	EPA 218.6			Analysis Date:	4/27/2015	SeqNo:	1988305

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-R100105	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100105
Client ID:	LCSW	Batch ID:	R100105	TestNo:	EPA 218.6			Analysis Date:	4/27/2015	SeqNo:	1988306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.038	0.20	5.000	0	101	90	110				

Sample ID	N015412-001A-DUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100105
Client ID:	ZZZZZZ	Batch ID:	R100105	TestNo:	EPA 218.6			Analysis Date:	4/27/2015	SeqNo:	1988308

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.130	0.20						0.1184	0	20	

Sample ID	N015412-001A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100105
Client ID:	ZZZZZZ	Batch ID:	R100105	TestNo:	EPA 218.6			Analysis Date:	4/27/2015	SeqNo:	1988309

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.183	0.20	1.000	0.1184	106	90	110				

Sample ID	N015412-001A-MSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100105
Client ID:	ZZZZZZ	Batch ID:	R100105	TestNo:	EPA 218.6			Analysis Date:	4/27/2015	SeqNo:	1988310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.190	0.20	1.000	0.1184	107	90	110	1.183	0.548	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015412-002A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100105
Client ID:	ZZZZZZ	Batch ID: R100105	TestNo: EPA 218.6		Analysis Date: 4/27/2015	SeqNo: 1988312

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.222	0.20	1.000	0.1653	106	90	110				

Sample ID	N015412-005A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100105
Client ID:	ZZZZZZ	Batch ID: R100105	TestNo: EPA 218.6		Analysis Date: 4/27/2015	SeqNo: 1988317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.036	0.20	1.000	0	104	90	110				

Sample ID	N015412-007A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100105
Client ID:	ZZZZZZ	Batch ID: R100105	TestNo: EPA 218.6		Analysis Date: 4/27/2015	SeqNo: 1988319

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	0.04460	104	90	110				

Sample ID	N015412-010A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100105
Client ID:	ZZZZZZ	Batch ID: R100105	TestNo: EPA 218.6		Analysis Date: 4/27/2015	SeqNo: 1988321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.180	1.0	25.00	13.24	99.7	90	110				

Sample ID	N015412-003A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100105
Client ID:	ZZZZZZ	Batch ID: R100105	TestNo: EPA 218.6		Analysis Date: 4/27/2015	SeqNo: 1988324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0.06680	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: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015412-009A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100105
Client ID:	ZZZZZZ	Batch ID: R100105	TestNo: EPA 218.6		Analysis Date: 4/27/2015	SeqNo: 1988326

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.505	0.20	5.000	7.398	102	90	110				

Sample ID	N015412-011A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100105
Client ID:	ZZZZZZ	Batch ID: R100105	TestNo: EPA 218.6		Analysis Date: 4/27/2015	SeqNo: 1988330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.528	1.0	5.000	1.387	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: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-50277	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	PBW	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987841

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

Sample ID	LCS-50277	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	LCSW	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987842

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.007	1.0	10.00	0	100	85	115				

Sample ID	N015411-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7.942	1.0	10.00	0	79.4	75	125				

Sample ID	N015411-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987885

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7.981	1.0	10.00	0	79.8	75	125	7.942	0.497	20	

Sample ID	N015412-007B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.780	1.0	10.00	0	87.8	75	125				

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 8:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: IC2_150422A	QC Batch: R100050			PrepDate			Analyst: QBM
Fluoride	2.0	0.062	0.50		mg/L	5	4/22/2015 03:19 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		

ASSET LABORATORIES

CALIFORNIA
11660 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

Date: *05-May-15*

CLIENT: CH2M HILL
Work Order: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R100050_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	PBW	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R100050_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	LCSW	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.474	0.10	2.500	0	99.0	90	110				

Sample ID	N015411-001DDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	ZZZZZZ	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986061

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.200	0.50						2.185	0.684	20	

Sample ID	N015411-003DMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	ZZZZZZ	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986062

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.340	0.50	12.50	2.385	87.6	80	120				

Sample ID	N015411-003DMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100050
Client ID:	ZZZZZZ	Batch ID:	R100050	TestNo:	EPA 300.0			Analysis Date:	4/22/2015	SeqNo:	1986063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.370	0.50	12.50	2.385	87.9	80	120	13.34	0.225	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: WETCHEM_150430H	QC Batch: R100189			PrepDate			Analyst: RB
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/30/2015

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

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 8:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/30/2015

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

ANALYTICAL RESULTS

Print Date: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 12:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.19	0.022	0.050		mg/L	1	4/30/2015

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

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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 1:34:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			**Analyst: RB**
Nitrate/Nitrite as N	0.097	0.022	0.050		mg/L	1	4/30/2015

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

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: *05-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 9:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150430H**	QC Batch: **R100189**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	4/30/2015

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: *05-May-15*

CLIENT: CH2M HILL
Work Order: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R100189	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100189
Client ID:	PBW	Batch ID:	R100189	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991921

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-R100189	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100189
Client ID:	LCSW	Batch ID:	R100189	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991922

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.042	0.050	1.000	0	104	85	115				

Sample ID	N015411-001EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100189
Client ID:	ZZZZZZ	Batch ID:	R100189	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991924

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	N015411-001EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100189
Client ID:	ZZZZZZ	Batch ID:	R100189	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.983	0.050	1.000	0	98.3	75	125				

Sample ID	N015411-001EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	100189
Client ID:	ZZZZZZ	Batch ID:	R100189	TestNo:	SM4500-NO3			Analysis Date:	4/30/2015	SeqNo:	1991928

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.998	0.050	1.000	0	99.8	75	125	0.9829	1.48	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-025-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150423A**	QC Batch: **50277**			PrepDate		**4/23/2015**	Analyst: **CEI**
Arsenic	1.1	0.016	0.10		µg/L	1	4/23/2015 04:50 PM
Manganese	ND	0.023	0.50		µg/L	1	4/23/2015 04:50 PM
Molybdenum	3.3	0.029	0.50		µg/L	1	4/23/2015 04:50 PM
Selenium	ND	0.070	0.50		µg/L	1	4/23/2015 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 8:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Arsenic	1.7	0.016	0.10		µg/L	1	4/23/2015 05:12 PM
Manganese	140	0.023	0.50		µg/L	1	4/23/2015 05:12 PM
Molybdenum	19	0.029	0.50		µg/L	1	4/23/2015 05:12 PM
Selenium	ND	0.070	0.50		µg/L	1	4/23/2015 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-29-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 12:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277				PrepDate	4/23/2015	Analyst: CEI
Arsenic	6.8	0.016	0.10		µg/L	1	4/23/2015 05:23 PM
Manganese	280	0.11	2.5		µg/L	5	4/23/2015 05:18 PM
Molybdenum	22	0.029	0.50		µg/L	1	4/23/2015 05:23 PM
Selenium	2.8	0.070	0.50		µg/L	1	4/23/2015 05:23 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-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-39-100-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 1:34:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Arsenic	4.1	0.016	0.10		µg/L	1	4/23/2015 05:34 PM
Manganese	ND	0.023	0.50		µg/L	1	4/23/2015 05:34 PM
Molybdenum	8.8	0.029	0.50		µg/L	1	4/23/2015 05:34 PM
Selenium	ND	0.070	0.50		µg/L	1	4/23/2015 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: *06-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-203
Lab Order:	N015412	**Collection Date:**	4/21/2015 9:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015412-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150423A	QC Batch: 50277			PrepDate		4/23/2015	Analyst: CEI
Molybdenum	120	0.029	0.50		µg/L	1	4/23/2015 05:45 PM
Selenium	ND	0.070	0.50		µg/L	1	4/23/2015 05:45 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		

CLIENT: CH2M HILL
Work Order: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID MB-50277 SampType: MBLK TestCode: 6020_DIS Units: µg/L Prep Date: 4/23/2015 RunNo: 100094
Client ID: PBW Batch ID: 50277 TestNo: EPA 6020 EPA 3010A Analysis Date: 4/23/2015 SeqNo: 1987938

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-50277 SampType: LCS TestCode: 6020_DIS Units: µg/L Prep Date: 4/23/2015 RunNo: 100094
Client ID: LCSW Batch ID: 50277 TestNo: EPA 6020 EPA 3010A Analysis Date: 4/23/2015 SeqNo: 1987939

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.594	0.10	10.00	0	95.9	85	115				
Manganese	97.132	0.50	100.0	0	97.1	85	115				
Molybdenum	9.986	0.50	10.00	0	99.9	85	115				
Selenium	9.300	0.50	10.00	0	93.0	85	115				

Sample ID N015411-001B-MS SampType: MS TestCode: 6020_DIS Units: µg/L Prep Date: 4/23/2015 RunNo: 100094
Client ID: ZZZZZZ Batch ID: 50277 TestNo: EPA 6020 EPA 3010A Analysis Date: 4/23/2015 SeqNo: 1987979

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.943	2.5	10.00	0.4726	84.7	75	125				

Sample ID N015411-001B-MS SampType: MS TestCode: 6020_DIS Units: µg/L Prep Date: 4/23/2015 RunNo: 100094
Client ID: ZZZZZZ Batch ID: 50277 TestNo: EPA 6020 EPA 3010A Analysis Date: 4/23/2015 SeqNo: 1987980

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.006	0.10	10.00	1.021	89.9	75	125				
Manganese	97.671	0.50	100.0	18.43	79.2	75	125				
Molybdenum	26.115	0.50	10.00	14.72	114	75	125				

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015411-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987981

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.139	2.5	10.00	0.4726	76.7	75	125	8.943	9.41	20	

Sample ID	N015411-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987982

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.856	0.10	10.00	1.021	88.4	75	125	10.01	1.51	20	
Manganese	97.836	0.50	100.0	18.43	79.4	75	125	97.67	0.169	20	
Molybdenum	26.207	0.50	10.00	14.72	115	75	125	26.11	0.353	20	

Sample ID	N015412-007B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	374.650	2.5	100.0	283.7	91.0	75	125				

Sample ID	N015412-007B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/23/2015	RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987984

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.133	0.10	10.00	6.806	93.3	75	125				
Molybdenum	32.516	0.50	10.00	22.12	104	75	125				
Selenium	11.856	0.50	10.00	2.808	90.5	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		

CH2MHILL

CHAIN OF CUSTODY RECORD

4/21/2015 2:34:24 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 4/21/2015
COC Number: 3

				Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Fluoride	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
Container:				250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter 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	4°C	H2SO4, pH<2, 4°C			
Filtered:				Field	Field	Field	Field	Field	Field	NA	NA			
Holding Time:				28	28	180	180	180	180	7	28			
	DATE	TIME	Matrix											
MW-201-203	4/21/2015	6:40	Water	X								N015412-1	1	
MW-202-203	4/21/2015	14:24	Water	X								-2	1	
MW-28-025-203	4/21/2015	8:00	Water		X	X	X	X	X		X	-3	5	
MW-28-025-203-EB	4/21/2015	7:26	Water	X			X					-4	2	Hold
MW-28-090-203	4/21/2015	8:38	Water		X	X	X	X	X	X	X	-5	6	
MW-28-090-203-EB	4/21/2015	7:28	Water	X			X					-6	2	Hold
MW-29-203	4/21/2015	12:38	Water		X	X	X	X	X		X	-7	5	
MW-29-203-EB	4/21/2015	12:02	Water	X			X					-8	2	Hold
MW-39-100-203	4/21/2015	13:34	Water	X		X	X	X			X	-9	3	
MW-46-175-203	4/21/2015	9:42	Water	X			X	X			X	-10	3	
MW-46-205-203	4/21/2015	10:12	Water	X			X					-11	2	
												TOTAL NUMBER OF CONTAINERS	78	

	Signatures	Date/Time
Approved by		4-21-15
Sampled by		1440
Relinquished by		
Received by		4/21/15 1440
Relinquished by		4/21/15 1648
Received by		4/21/15

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1.6°C, 1.9°C, 2.1°C
Airbill No: 1RH2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:

April 7 - May 14, 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:	4/21/2015	Workorder:	N015412
Rep sample Temp (Deg C):	1.6/1.9/2.1	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 4/24/2015

Reviewed By: 04/27/15

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:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

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

For **N015412-010A** concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 2.6487 * 5$$

$$= 13.2435$$

Reporting result in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 13}$$

Sample Calculation

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

FORMULA:

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

Fluoride, mg/L = A * DF

where:

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

For **N015412-005D** concentration in mg/L is calculated as follows:

Fluoride, mg/L = 0.396 * 5

= 1.98

Reporting results in two significant figures,

Fluoride, mg/L = 2.0

Nancy 5/5/2015

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 **N015412-007D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.1866 * 1

= 0.1866 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.19 mg/L

REB 5/5/2015

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 **N015412-003B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 1.05972554874764 * 1 * (25/25)

= 1.05972554874764

Reporting results in two significant figures,

Arsenic, ug/L = 1.1

Nancy 5/5/2015

ASSET Laboratories

ICP-Metals In Water

Dilution Test Summary

Work Order No.: N015412
Test Method: EPA 6020
Analysis Date: 4/23/2015

Matrix: Water
Batch No.: 50277

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr and Se. The calculated concentrations are < 25X RL's.
Dilution test failed to Mn.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015411-001B-DT 5X	Arsenic	µg/L	1.200449778	NA	1.020742768	17.61%	10
N015411-001B-DT 5X	Chromium	µg/L	0	NA	0		10
N015411-001B-DT 5X	Manganese	µg/L	24.88624211	FAIL	18.43315442	35.01%	10
N015411-001B-DT 5X	Molybdenum	µg/L	16.17365098	PASS	14.71740254	9.89%	10
N015411-001B-DT 25X	Selenium	µg/L	0	NA	0.472617024	100.00%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *30-Apr-15*

CLIENT: CH2M HILL
Work Order: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015411-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987975

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.560	2.5	10.00	0.4726	90.9	80	120				

Sample ID	N015411-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987978

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.898	0.10	10.00	1.021	88.8	80	120				
Manganese	96.432	0.50	100.0	18.43	78.0	80	120				S
Molybdenum	25.337	0.50	10.00	14.72	106	80	120				

MS/MSD for all analytes 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		

5/5/2015

CLIENT: CH2M HILL
Work Order: N015412
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N015411-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	100094
Client ID:	ZZZZZZ	Batch ID:	50277	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/23/2015	SeqNo:	1987881

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7.971	1.0	10.00	0	79.7	80	120				S

MS/MSD for all analytes 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 5/5/2015

May 13, 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.: N015473

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 28, 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: N015473

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 218.6:

Because the results for total dissolved chromium (6.2 ug/L) and hexavalent chromium (1.5 ug/L) for sample N015473-007 (MW-126-203) are discrepant, sample reanalysis and Matrix Spike protocol was performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (5.4 ug/L) and hexavalent chromium (1.2 ug/L) for sample N015473-013 (MW-44-125-203) are discrepant, sample reanalysis and Matrix Spike protocol was performed and the spike recovery is within criteria.

Dilution was necessary for samples N015473-001 (MW-22-203) and N015473-003 (MW-52M-203) due to matrix interference. Samples were analyzed at lower dilution however retention time criteria was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Dilution was necessary for samples N015473-002 (MW-52D-203), N015473-005 (MW-53D-203) and N015473-006 (MW-53M-203) due to matrix interference. Samples were analyzed at lower dilution however Matrix Spike was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (6.2 ug/L) and hexavalent chromium (1.5 ug/L) for sample N015473-007 (MW-126-203) 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 7.07 and 5.44 ug/L, respectively. Since these data confirmed

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

Because the results for total dissolved chromium (5.4 ug/L) and hexavalent chromium (1.2 ug/L) for sample N015473-013 (MW-44-125-203) 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 6.22 and 5.47 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 N015473-001, N015473-002, N015473-005, N015473-006 and N015473-012 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.

ASSET Laboratories

Date: *13-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015473
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015473-001A	MW-22-203	Water	4/22/2015 2:48:00 PM	4/28/2015	5/13/2015
N015473-001B	MW-22-203	Water	4/22/2015 2:48:00 PM	4/28/2015	5/13/2015
N015473-002A	MW-52D-203	Water	4/22/2015 11:22:00 AM	4/28/2015	5/13/2015
N015473-002B	MW-52D-203	Water	4/22/2015 11:22:00 AM	4/28/2015	5/13/2015
N015473-002C	MW-52D-203	Water	4/22/2015 11:22:00 AM	4/28/2015	5/13/2015
N015473-003A	MW-52M-203	Water	4/22/2015 12:10:00 PM	4/28/2015	5/13/2015
N015473-003B	MW-52M-203	Water	4/22/2015 12:10:00 PM	4/28/2015	5/13/2015
N015473-003C	MW-52M-203	Water	4/22/2015 12:10:00 PM	4/28/2015	5/13/2015
N015473-004A	MW-52S-203	Water	4/22/2015 12:55:00 PM	4/28/2015	5/13/2015
N015473-004B	MW-52S-203	Water	4/22/2015 12:55:00 PM	4/28/2015	5/13/2015
N015473-004C	MW-52S-203	Water	4/22/2015 12:55:00 PM	4/28/2015	5/13/2015
N015473-005A	MW-53D-203	Water	4/22/2015 9:30:00 AM	4/28/2015	5/13/2015
N015473-005B	MW-53D-203	Water	4/22/2015 9:30:00 AM	4/28/2015	5/13/2015
N015473-005C	MW-53D-203	Water	4/22/2015 9:30:00 AM	4/28/2015	5/13/2015
N015473-006A	MW-53M-203	Water	4/22/2015 10:18:00 AM	4/28/2015	5/13/2015
N015473-006B	MW-53M-203	Water	4/22/2015 10:18:00 AM	4/28/2015	5/13/2015
N015473-006C	MW-53M-203	Water	4/22/2015 10:18:00 AM	4/28/2015	5/13/2015
N015473-007A	MW-126-203	Water	4/23/2015 7:00:00 AM	4/28/2015	5/13/2015
N015473-007B	MW-126-203	Water	4/23/2015 7:00:00 AM	4/28/2015	5/13/2015
N015473-007C	MW-126-203	Water	4/23/2015 7:00:00 AM	4/28/2015	5/13/2015
N015473-007D	MW-126-203	Water	4/23/2015 7:00:00 AM	4/28/2015	5/13/2015
N015473-008A	MW-36-090-203	Water	4/23/2015 1:32:00 PM	4/28/2015	5/13/2015
N015473-008B	MW-36-090-203	Water	4/23/2015 1:32:00 PM	4/28/2015	5/13/2015
N015473-009A	MW-36-100-203	Water	4/23/2015 2:34:00 PM	4/28/2015	5/13/2015
N015473-009B	MW-36-100-203	Water	4/23/2015 2:34:00 PM	4/28/2015	5/13/2015
N015473-009C	MW-36-100-203	Water	4/23/2015 2:34:00 PM	4/28/2015	5/13/2015
N015473-010A	MW-44-070-203	Water	4/23/2015 7:44:00 AM	4/28/2015	5/13/2015
N015473-010B	MW-44-070-203	Water	4/23/2015 7:44:00 AM	4/28/2015	5/13/2015
N015473-010C	MW-44-070-203	Water	4/23/2015 7:44:00 AM	4/28/2015	5/13/2015

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015473
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015473-011A	MW-44-070-203-EB	Water	4/23/2015 7:04:00 AM	4/28/2015	5/13/2015
N015473-011B	MW-44-070-203-EB	Water	4/23/2015 7:04:00 AM	4/28/2015	5/13/2015
N015473-012A	MW-44-115-203	Water	4/23/2015 10:45:00 AM	4/28/2015	5/13/2015
N015473-012B	MW-44-115-203	Water	4/23/2015 10:45:00 AM	4/28/2015	5/13/2015
N015473-012C	MW-44-115-203	Water	4/23/2015 10:45:00 AM	4/28/2015	5/13/2015
N015473-013A	MW-44-125-203	Water	4/23/2015 8:55:00 AM	4/28/2015	5/13/2015
N015473-013B	MW-44-125-203	Water	4/23/2015 8:55:00 AM	4/28/2015	5/13/2015
N015473-013C	MW-44-125-203	Water	4/23/2015 8:55:00 AM	4/28/2015	5/13/2015
N015473-013D	MW-44-125-203	Water	4/23/2015 8:55:00 AM	4/28/2015	5/13/2015

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505A**	QC Batch: **R100244**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/5/2015 06:23 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150430A**	QC Batch: **50308**			PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/30/2015 02:33 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52D-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505B**	QC Batch:	**R100245**		PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/5/2015 08:14 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150430A**	QC Batch:	**50308**		PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/30/2015 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52M-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 12:10:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150505B	QC Batch: R100245			PrepDate			Analyst: RB
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/5/2015 07:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: ICP7_150501A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	5/1/2015 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52S-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 12:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150505A	QC Batch: R100244			PrepDate			Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/5/2015 12:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: ICP7_150501A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	5/1/2015 01:54 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53D-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 9:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505B**	QC Batch: **R100245**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/5/2015 08:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/1/2015 02:05 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

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53M-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 10:18:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505B**	QC Batch:	**R100245**		PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/5/2015 08:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150501A**	QC Batch:	**50308**		PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/1/2015 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		

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505A**	QC Batch:	**R100244**		PrepDate			Analyst: **RB**
Hexavalent Chromium	1.5	0.015	0.20		µg/L	1	5/5/2015 02:36 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150501A**	QC Batch:	**50308**		PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	6.2	0.086	1.0		µg/L	1	5/1/2015 02:27 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-090-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505A**	QC Batch:	**R100244**		PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/5/2015 04:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150501A**	QC Batch:	**50308**		PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/1/2015 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 2:34:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150505A	QC Batch: R100244			PrepDate			Analyst: RB
Hexavalent Chromium	59	0.15	2.0		µg/L	10	5/5/2015 01:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Chromium	51	0.086	1.0		µg/L	1	5/1/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 7:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505A**	QC Batch: **R100244**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/5/2015 04:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150430A**	QC Batch: **50308**			PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	4/30/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 10:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505A**	QC Batch:	**R100244**		PrepDate			Analyst: **RB**
Hexavalent Chromium	31	0.075	1.0		µg/L	5	5/5/2015 05:44 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150501A**	QC Batch:	**50308**		PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	28	0.43	5.0		µg/L	5	5/1/2015 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

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 8:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150505A**	QC Batch:	**R100244**		PrepDate			Analyst: **RB**
Hexavalent Chromium	1.2	0.015	0.20		µg/L	1	5/5/2015 06:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150501A**	QC Batch:	**50308**		PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	5.4	0.086	1.0		µg/L	1	5/1/2015 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		

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R100244	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100244		
Client ID:	PBW	Batch ID:	R100244	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993821		
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-R100244	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100244		
Client ID:	LCSW	Batch ID:	R100244	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993822		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		4.993	0.20	5.000	0	99.8	90	110					

Sample ID	N015473-004A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100244		
Client ID:	ZZZZZZ	Batch ID:	R100244	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993826		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		0.962	0.20	1.000	0	96.2	90	110					

Sample ID	N015473-009A-DUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100244		
Client ID:	ZZZZZZ	Batch ID:	R100244	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993830		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		59.123	2.0						58.76	0.619	20		

Sample ID	N015473-009A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100244		
Client ID:	ZZZZZZ	Batch ID:	R100244	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993831		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		106.324	2.0	50.00	58.76	95.1	90	110					

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015473-009A-MSD	SampType: MSD	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100244
Client ID:	ZZZZZZ	Batch ID: R100244	TestNo: EPA 218.6		Analysis Date: 5/5/2015	SeqNo: 1993832

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	107.815	2.0	50.00	58.76	98.1	90	110	106.3	1.39	20	

Sample ID	N015473-007A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100244
Client ID:	ZZZZZZ	Batch ID: R100244	TestNo: EPA 218.6		Analysis Date: 5/5/2015	SeqNo: 1993834

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.484	0.20	1.000	1.466	102	90	110				

Sample ID	N015473-008A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100244
Client ID:	ZZZZZZ	Batch ID: R100244	TestNo: EPA 218.6		Analysis Date: 5/5/2015	SeqNo: 1993838

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	0.08880	102	90	110				

Sample ID	N015473-010A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100244
Client ID:	ZZZZZZ	Batch ID: R100244	TestNo: EPA 218.6		Analysis Date: 5/5/2015	SeqNo: 1993840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0.06270	102	90	110				

Sample ID	N015473-012A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100244
Client ID:	ZZZZZZ	Batch ID: R100244	TestNo: EPA 218.6		Analysis Date: 5/5/2015	SeqNo: 1993844

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.151	1.0	25.00	30.70	97.8	90	110				

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015473-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100244**
Client ID: **ZZZZZZ** Batch ID: **R100244** TestNo: **EPA 218.6** Analysis Date: **5/5/2015** SeqNo: **1993846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.138	0.20	1.000	1.169	96.9	90	110				

Sample ID **N015473-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100244**
Client ID: **ZZZZZZ** Batch ID: **R100244** TestNo: **EPA 218.6** Analysis Date: **5/5/2015** SeqNo: **1993848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.067	1.0	5.000	0	101	90	110				

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R100245	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100245
Client ID:	PBW	Batch ID:	R100245	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993857

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-R100245	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100245
Client ID:	LCSW	Batch ID:	R100245	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993858

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.961	0.20	5.000	0	99.2	90	110				

Sample ID	N015473-003A-DUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100245
Client ID:	ZZZZZZ	Batch ID:	R100245	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	1.0						0	0	20	

Sample ID	N015473-003A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100245
Client ID:	ZZZZZZ	Batch ID:	R100245	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993863

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.043	1.0	5.000	0	101	90	110				

Sample ID	N015473-003A-MSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100245
Client ID:	ZZZZZZ	Batch ID:	R100245	TestNo:	EPA 218.6			Analysis Date:	5/5/2015	SeqNo:	1993864

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.650	1.0	5.000	0	93.0	90	110	5.043	8.12	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015473-002A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100245
Client ID:	ZZZZZZ	Batch ID: R100245	TestNo: EPA 218.6		Analysis Date: 5/5/2015	SeqNo: 1993866

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.951	1.0	5.000	0	99.0	90	110				

Sample ID	N015473-005A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100245
Client ID:	ZZZZZZ	Batch ID: R100245	TestNo: EPA 218.6		Analysis Date: 5/5/2015	SeqNo: 1993868

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.991	1.0	5.000	0.1305	97.2	90	110				

Sample ID	N015473-006A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100245
Client ID:	ZZZZZZ	Batch ID: R100245	TestNo: EPA 218.6		Analysis Date: 5/5/2015	SeqNo: 1993870

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.115	1.0	5.000	0	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: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-50308	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	PBW	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989597

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

Sample ID	LCS-50308	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	LCSW	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989598

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.369	1.0	10.00	0	93.7	85	115				

Sample ID	N015494-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.294	1.0	10.00	1.433	88.6	75	125				

Sample ID	N015494-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.360	1.0	10.00	1.433	89.3	75	125	10.29	0.631	20	

Sample ID	N015473-010B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989608

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.629	1.0	10.00	0	86.3	75	125				

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.13	0.022	0.050		mg/L	1	5/7/2015

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 2:34:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.13	0.022	0.050		mg/L	1	5/7/2015

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 10:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.20	0.022	0.050		mg/L	1	5/7/2015

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 8:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.11	0.022	0.050		mg/L	1	5/7/2015

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: *13-May-15*

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R100307	MBLK	4500N03F_W	mg/L		100307
Client ID: PBW	Batch ID: R100307	TestNo: SM4500-NO3		Analysis Date: 5/7/2015	SeqNo: 1998548

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	SampType	TestCode	Units	Prep Date	RunNo
LCS-R100307	LCS	4500N03F_W	mg/L		100307
Client ID: LCSW	Batch ID: R100307	TestNo: SM4500-NO3		Analysis Date: 5/7/2015	SeqNo: 1998549

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.008	0.050	1.000	0	101	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015473-007DMS	MS	4500N03F_W	mg/L		100307
Client ID: ZZZZZZ	Batch ID: R100307	TestNo: SM4500-NO3		Analysis Date: 5/7/2015	SeqNo: 1998552

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.134	0.050	1.000	0.1340	100	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015473-007DMSD	MSD	4500N03F_W	mg/L		100307
Client ID: ZZZZZZ	Batch ID: R100307	TestNo: SM4500-NO3		Analysis Date: 5/7/2015	SeqNo: 1998553

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.172	0.050	1.000	0.1340	104	75	125	1.134	3.30	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-22-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 2:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150430A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Arsenic	12	0.079	0.50		µg/L	5	4/30/2015 02:42 PM
Manganese	2200	0.57	12		µg/L	25	5/12/2015 03:58 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52D-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150430A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Arsenic	2.8	0.079	0.50		µg/L	5	4/30/2015 02:54 PM
Manganese	77	0.023	0.50		µg/L	1	4/30/2015 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52M-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 12:10:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Arsenic	1.5	0.016	0.10		µg/L	1	5/1/2015 01:43 PM
Manganese	38	0.023	0.50		µg/L	1	5/12/2015 02:23 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-52S-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 12:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Arsenic	0.12	0.016	0.10		µg/L	1	5/1/2015 05:02 PM
Manganese	2000	0.57	12		µg/L	25	5/12/2015 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53D-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 9:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate	**4/30/2015**		Analyst: **CEI**
Arsenic	3.0	0.079	0.50		µg/L	5	5/1/2015 02:11 PM
Manganese	1200	0.57	12		µg/L	25	5/12/2015 02:34 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-53M-203
Lab Order:	N015473	**Collection Date:**	4/22/2015 10:18:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate		**4/30/2015**	Analyst: **CEI**
Arsenic	0.68	0.079	0.50		µg/L	5	5/1/2015 02:22 PM
Manganese	270	0.11	2.5		µg/L	5	5/12/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-126-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate		**4/30/2015**	Analyst: **CEI**
Arsenic	3.1	0.016	0.10		µg/L	1	5/1/2015 02:27 PM
Manganese	400	0.11	2.5		µg/L	5	5/12/2015 02:45 PM
Molybdenum	51	0.029	0.50		µg/L	1	5/1/2015 02:27 PM
Selenium	ND	0.070	0.50		µg/L	1	5/1/2015 02:27 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-090-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 1:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate		**4/30/2015**	Analyst: **CEI**
Arsenic	20	0.016	0.10		µg/L	1	5/1/2015 02:50 PM
Manganese	0.81	0.023	0.50		µg/L	1	5/12/2015 02:51 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-36-100-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 2:34:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate	**4/30/2015**		Analyst: **CEI**
Arsenic	8.3	0.016	0.10		µg/L	1	5/1/2015 03:01 PM
Manganese	ND	0.023	0.50		µg/L	1	5/12/2015 02:57 PM
Molybdenum	29	0.029	0.50		µg/L	1	5/1/2015 03:01 PM
Selenium	ND	0.070	0.50		µg/L	1	5/1/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-070-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 7:44:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150430A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Arsenic	3.7	0.016	0.10		µg/L	1	4/30/2015 01:56 PM
Manganese	110	0.11	2.5		µg/L	5	4/30/2015 02:05 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 10:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate		**4/30/2015**	Analyst: **CEI**
Arsenic	5.2	0.016	0.10		µg/L	1	5/1/2015 03:12 PM
Manganese	ND	0.023	0.50		µg/L	1	5/12/2015 03:02 PM
Molybdenum	90	0.15	2.5		µg/L	5	5/1/2015 03:17 PM
Selenium	ND	0.070	0.50		µg/L	1	5/1/2015 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-203
Lab Order:	N015473	**Collection Date:**	4/23/2015 8:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015473-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Arsenic	3.1	0.016	0.10		µg/L	1	5/1/2015 03:23 PM
Manganese	390	0.11	2.5		µg/L	5	5/12/2015 03:08 PM
Molybdenum	49	0.029	0.50		µg/L	1	5/1/2015 03:23 PM
Selenium	ND	0.070	0.50		µg/L	1	5/1/2015 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

Date: *13-May-15*

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-50308	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	PBW	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.036	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	LCS-50308	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	LCSW	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989666

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.260	0.10	10.00	0	92.6	85	115				
Manganese	94.368	0.50	100.0	0	94.4	85	115				
Molybdenum	9.410	0.50	10.00	0	94.1	85	115				
Selenium	8.997	0.50	10.00	0	90.0	85	115				

Sample ID	N015494-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.191	0.10	10.00	0.9773	92.1	75	125				
Manganese	87.454	0.50	100.0	0	87.5	75	125				
Molybdenum	12.547	0.50	10.00	2.453	101	75	125				
Selenium	9.412	0.50	10.00	0.3445	90.7	75	125				

Sample ID	N015494-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.324	0.10	10.00	0.9773	93.5	75	125	10.19	1.30	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015494-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	87.803	0.50	100.0	0	87.8	75	125	87.45	0.398	20	
Molybdenum	12.638	0.50	10.00	2.453	102	75	125	12.55	0.729	20	
Selenium	8.891	0.50	10.00	0.3445	85.5	75	125	9.412	5.69	20	

Sample ID	N015473-010B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.852	0.10	10.00	3.665	91.9	75	125				
Molybdenum	24.041	0.50	10.00	13.05	110	75	125				
Selenium	8.565	0.50	10.00	0.07376	84.9	75	125				

Sample ID	N015473-010B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	209.264	2.5	100.0	112.0	97.3	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		

CH2MHILL

CHAIN OF CUSTODY RECORD

4/28/2015 2:45:47 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 4/28/2015
COC Number: 4

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter 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	4°C	H2SO4, pH<2, 4°C				
			Filtered:	Field	Field	Field	Field	Field	Field	NA	NA				
			Holding Time:	28	28	180	180	180	180	7	28				
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Fluoride	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-22-203	4/22/2015	14:48	Water	X		X	X					N015473-1	2	
MW-52D-203	4/22/2015	11:22	Water		X	X	X		X			-2	4	
MW-52M-203	4/22/2015	12:10	Water		X	X	X		X			-3	4	
MW-52S-203	4/22/2015	12:55	Water		X	X	X		X			-4	4	
MW-53D-203	4/22/2015	9:30	Water		X	X	X		X			-5	4	
MW-53M-203	4/22/2015	10:18	Water		X	X	X		X			-6	4	
MW-126-203	4/23/2015	7:00	Water		X	X	X	X	X		X	-7	5	
MW-36-090-203	4/23/2015	13:32	Water	X		X	X					-8	2	
MW-36-100-203	4/23/2015	14:34	Water	X		X	X	X			X	-9	3	
MW-44-070-203	4/23/2015	7:44	Water		X	X	X		X			-10	4	
MW-44-070-203-EB	4/23/2015	7:04	Water	X			X					-11	2	Hold
MW-44-115-203	4/23/2015	10:45	Water	X		X	X	X			X	-12	3	
MW-44-125-203	4/23/2015	8:55	Water		X	X	X	X	X		X	-13	5	

	Signatures	Date/Time
Approved by		4-28-15
Sampled by		1575
Relinquished by		
Received by		4/28/15 1515
Relinquished by		4/28/15 1730
Received by		4/28/15 1730

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1-4°C / 1-6°C / 2.1°C
Airbill No: 1642
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody
and
Marlon

Special Instructions:

April 7 - May 14, 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:	4/28/2015	Workorder:	N015473
Rep sample Temp (Deg C):	1.9/1.6/2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 4/29/2015

Reviewed By: 05/01/15

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:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

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

For **N015473-009A** concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 5.8758 * 10$$

$$= 58.758$$

Reporting result in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 59}$$

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 **N015473-007D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.1340 * 1

= 0.1340 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.13 mg/L

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 **N015473-010B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 3.66493812884793 * 1 * (25/25)

= 3.66493812884793

Reporting results in two significant figures,

Arsenic, ug/L = 3.7

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015473
Test Method: EPA 6020
Analysis Date: 4/30/2015

Matrix: Water
Batch No.: 50308

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015494-001B-DT 5X	Arsenic	µg/L	1.038294846	NA	0.977345071	6.24%	10
N015494-001B-DT 5X	Chromium	µg/L	1.515701941	NA	1.43269787	5.79%	10
N015494-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N015494-001B-DT 5X	Molybdenum	µg/L	2.332632197	NA	2.452963066	4.91%	10
N015494-001B-DT 5X	Selenium	µg/L	0.56520023	NA	0.344490406	64.07%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *13-May-15*

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015494-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.036	0.10	10.00	0.9773	90.6	80	120				
Manganese	88.336	0.50	100.0	0	88.3	80	120				
Molybdenum	12.686	0.50	10.00	2.453	102	80	120				
Selenium	9.078	0.50	10.00	0.3445	87.3	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		

CLIENT: CH2M HILL
Work Order: N015473
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N015494-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989601

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.455	1.0	10.00	1.433	90.2	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		

May 13, 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.: N015474

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 28, 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.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (6.3 ug/L) and hexavalent chromium (7.7 ug/L) for sample N015474-002 (MW-124-203) are discrepant, sample reanalysis and Matrix Spike protocol was performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (5.7 ug/L) and hexavalent chromium (6.8 ug/L) for sample N015474-006 (MW-33-090-203) are discrepant, sample reanalysis and Matrix Spike protocol was performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (3.2 ug/L) and hexavalent chromium (4.0 ug/L) for sample N015474-007 (MW-33-150-203) are discrepant, sample reanalysis and Matrix Spike protocol was performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (6.4 ug/L) and hexavalent chromium (7.9 ug/L) for sample N015474-008 (MW-33-210-203) are discrepant, sample reanalysis and Matrix Spike protocol was performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (6.7 ug/L) and hexavalent chromium (8.3 ug/L) for sample N015474-009 (MW-37D-203) are discrepant, sample reanalysis and Matrix Spike protocol was performed and the spike recovery is within criteria.

Dilution was necessary for samples N015474-007 (MW-33-150-203) and N015474-009 (MW-37D-203) due to matrix interference. Samples were analyzed at lower dilution however retention time criteria was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Dilution was necessary for samples N015474-002 (MW-124-203) and N015474-008 (MW-33-210-203) due to matrix interference. Samples were analyzed at lower dilution however Matrix Spike was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (6.3 ug/L) and hexavalent chromium (7.7 ug/L) for sample N015474-002 (MW-124-203) 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 6.1 and 6.4 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (5.7 ug/L) and hexavalent chromium (6.8 ug/L) for sample N015474-006 (MW-33-090-203) 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 5.7 and 5.9 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (3.2 ug/L) and hexavalent chromium (4.0 ug/L) for sample N015474-007 (MW-33-150-203) 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 3.0 and 3.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (6.4 ug/L) and hexavalent chromium (7.9 ug/L) for sample N015474-008 (MW-33-210-203) 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 6.1 and 6.2 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (6.7 ug/L) and hexavalent chromium (8.3 ug/L) for sample N015474-009 (MW-37D-203) 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 6.7 and 6.6 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 N015474-002, N015474-007,N015474-008 and N015474-009 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.

ASSET Laboratories

Date: *13-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015474
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015474-001A	MW-44-125-203-EB	Water	4/23/2015 8:08:00 AM	4/28/2015	5/13/2015
N015474-001B	MW-44-125-203-EB	Water	4/23/2015 8:08:00 AM	4/28/2015	5/13/2015
N015474-002A	MW-124-203	Water	4/27/2015 7:00:00 AM	4/28/2015	5/13/2015
N015474-002B	MW-124-203	Water	4/27/2015 7:00:00 AM	4/28/2015	5/13/2015
N015474-002C	MW-124-203	Water	4/27/2015 7:00:00 AM	4/28/2015	5/13/2015
N015474-002D	MW-124-203	Water	4/27/2015 7:00:00 AM	4/28/2015	5/13/2015
N015474-003A	MW-203-203	Water	4/27/2015 7:45:00 AM	4/28/2015	5/13/2015
N015474-004A	MW-33-040-203	Water	4/27/2015 9:58:00 AM	4/28/2015	5/13/2015
N015474-004B	MW-33-040-203	Water	4/27/2015 9:58:00 AM	4/28/2015	5/13/2015
N015474-004C	MW-33-040-203	Water	4/27/2015 9:58:00 AM	4/28/2015	5/13/2015
N015474-004D	MW-33-040-203	Water	4/27/2015 9:58:00 AM	4/28/2015	5/13/2015
N015474-004E	MW-33-040-203	Water	4/27/2015 9:58:00 AM	4/28/2015	5/13/2015
N015474-005A	MW-33-040-203-EB	Water	4/27/2015 8:35:00 AM	4/28/2015	5/13/2015
N015474-005B	MW-33-040-203-EB	Water	4/27/2015 8:35:00 AM	4/28/2015	5/13/2015
N015474-006A	MW-33-090-203	Water	4/27/2015 10:38:00 AM	4/28/2015	5/13/2015
N015474-006B	MW-33-090-203	Water	4/27/2015 10:38:00 AM	4/28/2015	5/13/2015
N015474-006C	MW-33-090-203	Water	4/27/2015 10:38:00 AM	4/28/2015	5/13/2015
N015474-006D	MW-33-090-203	Water	4/27/2015 10:38:00 AM	4/28/2015	5/13/2015
N015474-007A	MW-33-150-203	Water	4/27/2015 11:22:00 AM	4/28/2015	5/13/2015
N015474-007B	MW-33-150-203	Water	4/27/2015 11:22:00 AM	4/28/2015	5/13/2015
N015474-007C	MW-33-150-203	Water	4/27/2015 11:22:00 AM	4/28/2015	5/13/2015
N015474-007D	MW-33-150-203	Water	4/27/2015 11:22:00 AM	4/28/2015	5/13/2015
N015474-008A	MW-33-210-203	Water	4/27/2015 11:58:00 AM	4/28/2015	5/13/2015
N015474-008B	MW-33-210-203	Water	4/27/2015 11:58:00 AM	4/28/2015	5/13/2015
N015474-008C	MW-33-210-203	Water	4/27/2015 11:58:00 AM	4/28/2015	5/13/2015
N015474-008D	MW-33-210-203	Water	4/27/2015 11:58:00 AM	4/28/2015	5/13/2015
N015474-009A	MW-37D-203	Water	4/27/2015 2:52:00 PM	4/28/2015	5/13/2015
N015474-009B	MW-37D-203	Water	4/27/2015 2:52:00 PM	4/28/2015	5/13/2015
N015474-009C	MW-37D-203	Water	4/27/2015 2:52:00 PM	4/28/2015	5/13/2015

CLIENT:	CH2M HILL
Project:	PG&E Topock
Lab Order:	N015474
Contract No:	2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015474-010A	MW-204-203	Water	4/28/2015 6:36:00 AM	4/28/2015	5/13/2015

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150506A**	QC Batch:	**R100271**		PrepDate			Analyst: **RB**
Hexavalent Chromium	7.7	0.075	1.0		µg/L	5	5/6/2015 12:06 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150512A**	QC Batch:	**50308**		PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	6.3	0.086	1.0		µg/L	1	5/12/2015 03:24 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-203-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 7:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150506A	QC Batch: R100271			PrepDate			Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/6/2015 11:09 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 9:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150506A**	QC Batch: **R100271**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/6/2015 11:28 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/1/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: IC7_150506A	QC Batch: R100271			PrepDate			Analyst: RB
Hexavalent Chromium	6.8	0.015	0.20		µg/L	1	5/6/2015 01:10 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: ICP7_150512A	QC Batch: 50308			PrepDate		4/30/2015	Analyst: CEI
Chromium	5.7	0.086	1.0		µg/L	1	5/12/2015 03:35 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150506A**	QC Batch:	**R100271**		PrepDate			Analyst: **RB**
Hexavalent Chromium	4.0	0.075	1.0		µg/L	5	5/6/2015 03:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150512A**	QC Batch:	**50308**		PrepDate		**4/30/2015**	Analyst: **CEI**
Chromium	3.2	0.086	1.0		µg/L	1	5/12/2015 03:41 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150506A**	QC Batch: **R100271**			PrepDate			**Analyst: RB**
Hexavalent Chromium	7.9	0.075	1.0		µg/L	5	5/6/2015 03:23 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150501A**	QC Batch: **50308**			PrepDate		**4/30/2015**	**Analyst: CEI**
Chromium	6.4	0.086	1.0		µg/L	1	5/1/2015 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150506A**	QC Batch:	**R100271**			PrepDate		Analyst: **RB**
Hexavalent Chromium	8.3	0.075	1.0		µg/L	5	5/6/2015 04:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150512A**	QC Batch:	**50308**			PrepDate	**4/30/2015**	Analyst: **CEI**
Chromium	6.7	0.086	1.0		µg/L	1	5/12/2015 03:52 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

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-204-203
Lab Order:	N015474	**Collection Date:**	4/28/2015 6:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150506A**	QC Batch: **R100271**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/6/2015 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

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

Date: *13-May-15*

CLIENT: CH2M HILL
Work Order: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R100271	LCS	218.6_WPGE	µg/L		100271
Client ID: LCSW	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995772

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.959	0.20	5.000	0	99.2	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R100271	MBLK	218.6_WPGE	µg/L		100271
Client ID: PBW	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995773

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
N015474-003A-MS	MS	218.6_WPGE	µg/L		100271
Client ID: ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995775

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.202	0.20	1.000	0.1509	105	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015474-004A-MS	MS	218.6_WPGE	µg/L		100271
Client ID: ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995777

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.202	0.20	1.000	0.1795	102	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015565-001E-DUP	DUP	218.6_WPGE	µg/L		100271
Client ID: ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995782

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.137	0.20						0.1309	0	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015474-002A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995783

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	32.160	1.0	25.00	7.747	97.7	90	110				

Sample ID	N015474-002A-MSD	SampType: MSD	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995784

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	32.815	1.0	25.00	7.747	100	90	110	32.16	2.01	20	

Sample ID	N015474-006A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.839	0.20	5.000	6.827	100	90	110				

Sample ID	N015474-010A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995790

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.122	0.20	1.000	0.09920	102	90	110				

Sample ID	N015474-007A-MS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995792

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.832	1.0	5.000	4.006	96.5	90	110				

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015474-008A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100271
Client ID:	ZZZZZZ	Batch ID:	R100271	TestNo:	EPA 218.6			Analysis Date:	5/6/2015	SeqNo:	1995794

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.090	1.0	5.000	7.858	105	90	110				

Sample ID	N015474-009A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100271
Client ID:	ZZZZZZ	Batch ID:	R100271	TestNo:	EPA 218.6			Analysis Date:	5/6/2015	SeqNo:	1995798

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.300	1.0	5.000	8.344	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: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-50308** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/30/2015** RunNo: **100142**
Client ID: **PBW** Batch ID: **50308** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2015** SeqNo: **1989597**

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

Sample ID **LCS-50308** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/30/2015** RunNo: **100142**
Client ID: **LCSW** Batch ID: **50308** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2015** SeqNo: **1989598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.369	1.0	10.00	0	93.7	85	115				

Sample ID **N015494-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/30/2015** RunNo: **100142**
Client ID: **ZZZZZZ** Batch ID: **50308** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2015** SeqNo: **1989602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.294	1.0	10.00	1.433	88.6	75	125				

Sample ID **N015494-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/30/2015** RunNo: **100142**
Client ID: **ZZZZZZ** Batch ID: **50308** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2015** SeqNo: **1989603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.360	1.0	10.00	1.433	89.3	75	125	10.29	0.631	20	

Sample ID **N015473-010B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/30/2015** RunNo: **100142**
Client ID: **ZZZZZZ** Batch ID: **50308** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **4/30/2015** SeqNo: **1989608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.629	1.0	10.00	0	86.3	75	125				

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: IC2_150429A	QC Batch:	R100130		PrepDate			Analyst: QBM
Fluoride	1.8	0.12	1.0		mg/L	10	4/29/2015 03:21 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 9:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150429A**	QC Batch:	**R100130**		PrepDate			Analyst: **QBM**
Fluoride	7.8	0.062	0.50		mg/L	5	4/29/2015 03:35 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: IC2_150429A	QC Batch: R100130			PrepDate			Analyst: QBM
Fluoride	2.1	0.062	0.50		mg/L	5	4/29/2015 03:50 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150429A**	QC Batch:	**R100130**			PrepDate		Analyst: **QBM**
Fluoride	2.8	0.062	0.50		mg/L	5	4/29/2015 04:04 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

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: IC2_150429A	QC Batch: R100130			PrepDate			Analyst: QBM
Fluoride	1.6	0.12	1.0		mg/L	10	4/29/2015 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		

CLIENT: CH2M HILL
Work Order: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R100130_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100130		
Client ID:	PBW	Batch ID:	R100130	TestNo:	EPA 300.0			Analysis Date:	4/29/2015	SeqNo:	1989150		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		ND	0.10										

Sample ID	LCS-R100130_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100130		
Client ID:	LCSW	Batch ID:	R100130	TestNo:	EPA 300.0			Analysis Date:	4/29/2015	SeqNo:	1989151		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		2.366	0.10	2.500	0	94.6	90	110					

Sample ID	N015474-004DDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100130		
Client ID:	ZZZZZZ	Batch ID:	R100130	TestNo:	EPA 300.0			Analysis Date:	4/29/2015	SeqNo:	1989159		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		7.920	0.50						7.770	1.91	20		

Sample ID	N015474-006CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100130		
Client ID:	ZZZZZZ	Batch ID:	R100130	TestNo:	EPA 300.0			Analysis Date:	4/29/2015	SeqNo:	1989162		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		13.290	0.50	12.50	2.140	89.2	80	120					

Sample ID	N015474-006CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	100130		
Client ID:	ZZZZZZ	Batch ID:	R100130	TestNo:	EPA 300.0			Analysis Date:	4/29/2015	SeqNo:	1989163		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		12.980	0.50	12.50	2.140	86.7	80	120	13.29	2.36	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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	5/7/2015

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 9:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/7/2015

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	1.0	0.022	0.050		mg/L	1	5/7/2015

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch:	**R100307**		PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	1.4	0.022	0.050		mg/L	1	5/7/2015

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	5/7/2015

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

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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150507D**	QC Batch: **R100307**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.22	0.022	0.050		mg/L	1	5/7/2015

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: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R100307	MBLK	4500N03F_W	mg/L		100307
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
PBW	R100307	SM4500-NO3		5/7/2015	1998548

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	SampType	TestCode	Units	Prep Date	RunNo
LCS-R100307	LCS	4500N03F_W	mg/L		100307
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
LCSW	R100307	SM4500-NO3		5/7/2015	1998549

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.008	0.050	1.000	0	101	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015473-007DMS	MS	4500N03F_W	mg/L		100307
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100307	SM4500-NO3		5/7/2015	1998552

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.134	0.050	1.000	0.1340	100	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015473-007DMSD	MSD	4500N03F_W	mg/L		100307
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100307	SM4500-NO3		5/7/2015	1998553

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.172	0.050	1.000	0.1340	104	75	125	1.134	3.30	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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-124-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308				PrepDate	4/30/2015	Analyst: CEI
Arsenic	0.88	0.016	0.10		µg/L	1	5/1/2015 03:34 PM
Manganese	ND	0.023	0.50		µg/L	1	5/12/2015 03:24 PM
Molybdenum	20	0.15	2.5		µg/L	5	5/1/2015 03:39 PM
Selenium	ND	0.35	2.5		µg/L	5	5/1/2015 03:39 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 9:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308				PrepDate	4/30/2015	Analyst: CEI
Arsenic	11	0.016	0.10		µg/L	1	5/1/2015 03:56 PM
Manganese	ND	0.023	0.50		µg/L	1	5/12/2015 03:30 PM
Molybdenum	130	0.029	0.50		µg/L	1	5/1/2015 03:56 PM
Selenium	ND	0.070	0.50		µg/L	1	5/1/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 10:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308				PrepDate	4/30/2015	Analyst: CEI
Arsenic	0.99	0.016	0.10		µg/L	1	5/1/2015 04:07 PM
Manganese	ND	0.023	0.50		µg/L	1	5/12/2015 03:35 PM
Molybdenum	12	0.029	0.50		µg/L	1	5/1/2015 04:07 PM
Selenium	ND	0.070	0.50		µg/L	1	5/1/2015 04:07 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

ANALYTICAL RESULTS

Print Date: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 11:22:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308				PrepDate	4/30/2015	Analyst: CEI
Arsenic	1.0	0.016	0.10		µg/L	1	5/1/2015 04:18 PM
Manganese	ND	0.023	0.50		µg/L	1	5/12/2015 03:41 PM
Molybdenum	51	0.15	2.5		µg/L	5	5/1/2015 04:23 PM
Selenium	ND	0.35	2.5		µg/L	5	5/1/2015 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 11:58:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150501A**	QC Batch: **50308**				PrepDate	**4/30/2015**	Analyst: **CEI**
Arsenic	0.92	0.016	0.10		µg/L	1	5/1/2015 04:29 PM
Manganese	ND	0.023	0.50		µg/L	1	5/12/2015 03:46 PM
Molybdenum	20	0.15	2.5		µg/L	5	5/1/2015 04:34 PM
Selenium	ND	0.35	2.5		µg/L	5	5/1/2015 04:34 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: *13-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-37D-203
Lab Order:	N015474	**Collection Date:**	4/27/2015 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015474-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: ICP7_150501A	QC Batch: 50308				PrepDate	4/30/2015	Analyst: CEI
Molybdenum	46	0.15	2.5		µg/L	5	5/1/2015 04:45 PM
Selenium	ND	0.35	2.5		µg/L	5	5/1/2015 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		

CLIENT: CH2M HILL
Work Order: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-50308	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	PBW	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.036	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	LCS-50308	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	LCSW	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989666

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.260	0.10	10.00	0	92.6	85	115				
Manganese	94.368	0.50	100.0	0	94.4	85	115				
Molybdenum	9.410	0.50	10.00	0	94.1	85	115				
Selenium	8.997	0.50	10.00	0	90.0	85	115				

Sample ID	N015494-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.191	0.10	10.00	0.9773	92.1	75	125				
Manganese	87.454	0.50	100.0	0	87.5	75	125				
Molybdenum	12.547	0.50	10.00	2.453	101	75	125				
Selenium	9.412	0.50	10.00	0.3445	90.7	75	125				

Sample ID	N015494-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	4/30/2015	SeqNo:	1989671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.324	0.10	10.00	0.9773	93.5	75	125	10.19	1.30	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: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015494-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	87.803	0.50	100.0	0	87.8	75	125	87.45	0.398	20	
Molybdenum	12.638	0.50	10.00	2.453	102	75	125	12.55	0.729	20	
Selenium	8.891	0.50	10.00	0.3445	85.5	75	125	9.412	5.69	20	

Sample ID	N015473-010B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.852	0.10	10.00	3.665	91.9	75	125				
Molybdenum	24.041	0.50	10.00	13.05	110	75	125				
Selenium	8.565	0.50	10.00	0.07376	84.9	75	125				

Sample ID	N015473-010B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/30/2015	RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	209.264	2.5	100.0	112.0	97.3	75	125				

Qualifiers:

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

CH2MHILL **CHAIN OF CUSTODY RECORD** *4/28/2015 2:45:47 PM* Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 4/28/2015
COC Number: 4

			Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	1 Liter 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	4°C	H2SO4, pH<2, 4°C			
			Filtered:	Field	Field	Field	Field	Field	Field	NA	NA			
			Holding Time:	28	28	180	180	180	180	7	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A-cr) Field Filtered Chromium - HOLD	Anions (E300.0) Fluoride	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-44-125-203-EB	4/23/2015	8:08	Water	X			X					N015474-1	2	Hold
MW-124-203	4/27/2015	7:00	Water	X		X	X	X		X	X	-2	4	
MW-203-203	4/27/2015	7:45	Water	X								-3	1	
MW-33-040-203	4/27/2015	9:58	Water		X	X	X	X	X	X	X	-4	6	
MW-33-040-203-EB	4/27/2015	8:35	Water	X			X					-5	2	Hold
MW-33-090-203	4/27/2015	10:38	Water	X		X	X	X		X	X	-6	4	
MW-33-150-203	4/27/2015	11:22	Water	X		X	X	X		X	X	-7	4	
MW-33-210-203	4/27/2015	11:58	Water	X		X	X	X		X	X	-8	4	
MW-37D-203	4/27/2015	14:52	Water	X			X	X			X	-9	3	
MW-204-203	4/28/2015	6:36	Water	X									1	
												TOTAL NUMBER OF CONTAINERS	77	

	Signatures	Date/Time
Approved by		4-28-15 1515
Sampled by		
Relinquished by		4/28/15 1715
Received by		4/28/15 ABC
Relinquished by		
Received by		

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 1.4°C / 1.6°C / 2.1°C
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN: Sample Custody and Marlon

Special Instructions:
April 7 - May 14, 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:	4/28/2015	Workorder:	N015474
Rep sample Temp (Deg C):	1.9/1.6/2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 4/29/2015

Reviewed By: 5/13/2015

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:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

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

For **N015474-002A** concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 1.5493 * 5$$

$$= 7.7465$$

Reporting result in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 7.7}$$

Sample Calculation

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

FORMULA:

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

Fluoride, mg/L = A * DF

where:

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

For **N015474-~~001C~~ 002C** concentration in mg/L is calculated as follows:

Fluoride, mg/L = 0.182 * 10

= 1.82

Reporting results in two significant figures,

Fluoride, mg/L = 1.8

5/12/2015

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 **N015474-002D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 1.2495 * 1

= 1.2495 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 1.2 mg/L

REB 5/12/2015

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 **N015474-002B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.875535697869694 * 1 * (25/25)

= 0.875535697869694

Reporting results in two significant figures,

Arsenic, ug/L = 0.88

ASSET Laboratories

ICP-Metals In Water

Dilution Test Summary

Work Order No.: N015474
Test Method: EPA 6020
Analysis Date: 4/30/2015

Matrix: Water
Batch No.: 50308

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015494-001B-DT 5X	Arsenic	µg/L	1.038294846	NA	0.977345071	6.24%	10
N015494-001B-DT 5X	Chromium	µg/L	1.515701941	NA	1.43269787	5.79%	10
N015494-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N015494-001B-DT 5X	Molybdenum	µg/L	2.332632197	NA	2.452963066	4.91%	10
N015494-001B-DT 5X	Selenium	µg/L	0.56520023	NA	0.344490406	64.07%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *13-May-15*

CLIENT: CH2M HILL
Work Order: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015494-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.036	0.10	10.00	0.9773	90.6	80	120				
Manganese	88.336	0.50	100.0	0	88.3	80	120				
Molybdenum	12.686	0.50	10.00	2.453	102	80	120				
Selenium	9.078	0.50	10.00	0.3445	87.3	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		

CLIENT: CH2M HILL
Work Order: N015474
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N015494-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	100142
Client ID:	ZZZZZZ	Batch ID:	50308	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	4/30/2015	SeqNo:	1989601

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.455	1.0	10.00	1.433	90.2	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		

May 26, 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.: N015566

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 05, 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.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.80 ug/L) and hexavalent chromium (0.73 ug/L) for sample N015566-003 (MW-24B-203) are discrepant, Matrix Spike protocol was performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (3.0 ug/L) and hexavalent chromium (4.3 ug/L) for sample N015566-015 (MW-72BR-200-203) are discrepant, Matrix Spike protocol was performed and the spike recovery is within criteria.

Dilution was necessary for sample N015566-003 (MW-24B-203) due to matrix interference. Sample was analyzed at lower dilution however retention time criteria and Matrix Spike 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.

Dilution was necessary for samples N015566-009 (MW-23-060-203), N015566-010 (MW-23-080-203) and N015566-015 (MW-72BR-200-203) due to matrix interference. Samples were analyzed at lower dilution however retention time criteria was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N015566-003, N015566-009, N015566-010, N015566-011, N015566-012 and N015566-015 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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"

met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N015566-011B-MS and N015566-011B-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 (1.8 ug/L) and hexavalent chromium (0.73 ug/L) for sample N015566-003 (MW-24B-203) 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 2.2 and 0.36 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (3.0 ug/L) and hexavalent chromium (4.3 ug/L) for sample N015566-015 (MW-72BR-200-203) 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 3.7 and 3.6 ug/L, respectively. Thus,the redigested result is reported.

ASSET Laboratories

Date: *26-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015566
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015566-001A	MW-122-203	Water	4/29/2015 8:00:00 AM	5/5/2015	5/26/2015
N015566-001B	MW-122-203	Water	4/29/2015 8:00:00 AM	5/5/2015	5/26/2015
N015566-001C	MW-122-203	Water	4/29/2015 8:00:00 AM	5/5/2015	5/26/2015
N015566-002A	MW-24A-203	Water	4/29/2015 1:00:00 PM	5/5/2015	5/26/2015
N015566-002B	MW-24A-203	Water	4/29/2015 1:00:00 PM	5/5/2015	5/26/2015
N015566-002C	MW-24A-203	Water	4/29/2015 1:00:00 PM	5/5/2015	5/26/2015
N015566-003A	MW-24B-203	Water	4/29/2015 2:36:00 PM	5/5/2015	5/26/2015
N015566-003B	MW-24B-203	Water	4/29/2015 2:36:00 PM	5/5/2015	5/26/2015
N015566-003C	MW-24B-203	Water	4/29/2015 2:36:00 PM	5/5/2015	5/26/2015
N015566-004A	MW-63-065-203	Water	4/29/2015 8:36:00 AM	5/5/2015	5/26/2015
N015566-004B	MW-63-065-203	Water	4/29/2015 8:36:00 AM	5/5/2015	5/26/2015
N015566-004C	MW-63-065-203	Water	4/29/2015 8:36:00 AM	5/5/2015	5/26/2015
N015566-005A	MW-205-203	Water	4/30/2015 6:45:00 AM	5/5/2015	5/26/2015
N015566-006A	MW-206-203	Water	4/30/2015 6:50:00 AM	5/5/2015	5/26/2015
N015566-007A	MW-207-203	Water	4/30/2015 3:32:00 PM	5/5/2015	5/26/2015
N015566-008A	MW-208-203	Water	4/30/2015 3:30:00 PM	5/5/2015	5/26/2015
N015566-009A	MW-23-060-203	Water	4/30/2015 1:12:00 PM	5/5/2015	5/26/2015
N015566-009B	MW-23-060-203	Water	4/30/2015 1:12:00 PM	5/5/2015	5/26/2015
N015566-010A	MW-23-080-203	Water	4/30/2015 2:46:00 PM	5/5/2015	5/26/2015
N015566-010B	MW-23-080-203	Water	4/30/2015 2:46:00 PM	5/5/2015	5/26/2015
N015566-011A	MW-38D-203	Water	4/30/2015 10:32:00 AM	5/5/2015	5/26/2015
N015566-011B	MW-38D-203	Water	4/30/2015 10:32:00 AM	5/5/2015	5/26/2015
N015566-011C	MW-38D-203	Water	4/30/2015 10:32:00 AM	5/5/2015	5/26/2015
N015566-012A	MW-38D-203SMT	Water	4/30/2015 9:10:00 AM	5/5/2015	5/26/2015
N015566-012B	MW-38D-203SMT	Water	4/30/2015 9:10:00 AM	5/5/2015	5/26/2015
N015566-012C	MW-38D-203SMT	Water	4/30/2015 9:10:00 AM	5/5/2015	5/26/2015
N015566-013A	MW-38S-203	Water	4/30/2015 8:36:00 AM	5/5/2015	5/26/2015
N015566-013B	MW-38S-203	Water	4/30/2015 8:36:00 AM	5/5/2015	5/26/2015
N015566-013C	MW-38S-203	Water	4/30/2015 8:36:00 AM	5/5/2015	5/26/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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
Project: PG&E Topock
Lab Order: N015566
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015566-014A	MW-38S-203SMT	Water	4/30/2015 8:15:00 AM	5/5/2015	5/26/2015
N015566-014B	MW-38S-203SMT	Water	4/30/2015 8:15:00 AM	5/5/2015	5/26/2015
N015566-014C	MW-38S-203SMT	Water	4/30/2015 8:15:00 AM	5/5/2015	5/26/2015
N015566-015A	MW-72BR-200-203	Water	5/4/2015 2:42:00 PM	5/5/2015	5/26/2015
N015566-015B	MW-72BR-200-203	Water	5/4/2015 2:42:00 PM	5/5/2015	5/26/2015
N015566-015C	MW-72BR-200-203	Water	5/4/2015 2:42:00 PM	5/5/2015	5/26/2015
N015566-016A	MW-209-203	Water	5/5/2015 8:19:00 AM	5/5/2015	5/26/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.30	0.015	0.20		µg/L	1	5/15/2015 11:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150508A**	QC Batch: **50363**			PrepDate		**5/6/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/8/2015 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24A-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 1:00:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.28	0.015	0.20		µg/L	1	5/15/2015 11:44 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150508A**	QC Batch: **50363**			PrepDate		**5/6/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/8/2015 11:47 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24B-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 2:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150515B** QC Batch: **R100395** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/15/2015 11:06 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150508A** QC Batch: **50363** PrepDate **5/6/2015**							Analyst: **CEI**
Chromium	1.8	0.086	1.0		µg/L	1	5/8/2015 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150515B** QC Batch: **R100395** PrepDate							Analyst: **RB**
Hexavalent Chromium	1.4	0.015	0.20		µg/L	1	5/15/2015 05:44 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150508A** QC Batch: **50363** PrepDate **5/6/2015**							Analyst: **CEI**
Chromium	1.3	0.086	1.0		µg/L	1	5/8/2015 11:58 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

ANALYTICAL RESULTS

Print Date: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-205-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 6:45:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/15/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-206-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 6:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/15/2015 06:22 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-207-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 3:32:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/15/2015 07:19 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-208-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 3:30:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/15/2015 07:38 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-060-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 1:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150518A** QC Batch: **R100420**				PrepDate			Analyst: **QBM**
Hexavalent Chromium	38	0.075	1.0		µg/L	5	5/18/2015 11:15 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150521A** QC Batch: **50363**				PrepDate		**5/6/2015**	Analyst: **CEI**
Chromium	34	0.086	1.0		µg/L	1	5/21/2015 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-080-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 2:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150518A** QC Batch: **R100420** PrepDate							Analyst: **QBM**
Hexavalent Chromium	3.0	0.075	1.0		µg/L	5	5/18/2015 11:36 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150521A** QC Batch: **50363** PrepDate **5/6/2015**							Analyst: **CEI**
Chromium	2.5	0.086	1.0		µg/L	1	5/21/2015 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 10:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150515B** QC Batch: **R100395** PrepDate							Analyst: **RB**
Hexavalent Chromium	16	0.075	1.0		µg/L	5	5/15/2015 08:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150508A** QC Batch: **50385** PrepDate **5/7/2015**							Analyst: **CEI**
Chromium	14	0.086	1.0		µg/L	1	5/8/2015 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-203SMT
Lab Order:	N015566	**Collection Date:**	4/30/2015 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150518A** QC Batch: **R100420** PrepDate							Analyst: **QBM**
Hexavalent Chromium	20	0.075	1.0		µg/L	5	5/18/2015 01:10 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150521A** QC Batch: **50385** PrepDate **5/7/2015**							Analyst: **CEI**
Chromium	20	0.43	5.0		µg/L	5	5/21/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/15/2015 09:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150508A**	QC Batch: **50385**			PrepDate		**5/7/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/8/2015 02:21 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-203SMT
Lab Order:	N015566	**Collection Date:**	4/30/2015 8:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/15/2015 09:50 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150508A**	QC Batch: **50385**			PrepDate		**5/7/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/8/2015 02:27 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-203
Lab Order:	N015566	**Collection Date:**	5/4/2015 2:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150518A** QC Batch: **R100420** PrepDate							Analyst: **QBM**
Hexavalent Chromium	4.3	0.075	1.0		µg/L	5	5/18/2015 12:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150522A** QC Batch: **50385** PrepDate **5/7/2015**							Analyst: **CEI**
Chromium	3.7	0.086	1.0		µg/L	1	5/22/2015 05:56 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-209-203
Lab Order:	N015566	**Collection Date:**	5/5/2015 8:19:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150515B**	QC Batch: **R100395**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/15/2015 10:47 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		

CLIENT: CH2M HILL
Work Order: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100395** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **PBW** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002317**

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-R100395** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **LCSW** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.942	0.20	5.000	0	98.8	90	110				

Sample ID **N015566-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.350	0.20	1.000	1.388	96.2	90	110				

Sample ID **N015566-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.135	0.20	1.000	0.1076	103	90	110				

Sample ID **N015566-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002324**

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	0.09960	99.7	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015566-004A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.315	0.20						1.388	5.45	20	

Sample ID **N015566-004A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.354	0.20	1.000	1.388	96.5	90	110	2.350	0.157	20	

Sample ID **N015566-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0.1108	96.3	90	110				

Sample ID **N015566-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.140	0.20	1.000	0.1054	103	90	110				

Sample ID **N015566-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	20.524	1.0	5.000	15.98	90.9	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015566-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.048	0.20	1.000	0.06530	98.3	90	110				

Sample ID **N015566-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002340**

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	0.09460	101	90	110				

Sample ID **N015566-016A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0.07110	101	90	110				

Sample ID **N015566-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.019	1.0	5.000	0.7295	106	90	110				

Sample ID **N015566-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002348**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.282	0.20	1.000	0.3025	98.0	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015566-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100395**
Client ID: **ZZZZZZ** Batch ID: **R100395** TestNo: **EPA 218.6** Analysis Date: **5/15/2015** SeqNo: **2002350**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.344	0.20	1.000	0.2839	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100420** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **PBW** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.018	0.20									

Sample ID **LCS-R100420** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **LCSW** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.051	0.20	5.000	0	101	90	110				

Sample ID **N015566-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **ZZZZZZ** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.263	1.0	25.00	38.38	104	90	110				

Sample ID **N015566-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **ZZZZZZ** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.664	1.0	5.000	2.982	93.6	90	110				

Sample ID **N015566-015ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **ZZZZZZ** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.143	1.0						4.273	3.10	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		

CLIENT: CH2M HILL
Work Order: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015566-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **ZZZZZZ** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.863	1.0	5.000	4.273	91.8	90	110				

Sample ID **N015566-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **ZZZZZZ** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.315	1.0	25.00	19.68	103	90	110				

Sample ID **N015566-012A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **ZZZZZZ** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.453	1.0	25.00	19.68	103	90	110	45.31	0.305	20	

Sample ID **N015579-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100420**
Client ID: **ZZZZZZ** Batch ID: **R100420** TestNo: **EPA 218.6** Analysis Date: **5/18/2015** SeqNo: **2003461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	511.585	10	250.0	252.2	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-50363** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **PBW** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997423**

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

Sample ID **LCS-50363** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **LCSW** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.831	1.0	10.00	0	98.3	85	115				

Sample ID **N015563-007B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.663	1.0	10.00	0.2340	94.3	75	125				

Sample ID **N015563-007B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.794	1.0	10.00	0.2340	95.6	75	125	9.663	1.35	20	

Sample ID **N015563-017B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	23.868	1.0	10.00	14.65	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-50385** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100268**
Client ID: **PBW** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997464**

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

Sample ID **LCS-50385** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100268**
Client ID: **LCSW** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.520	1.0	10.00	0	95.2	85	115				

Sample ID **N015566-011B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.840	1.0	10.00	13.91	79.3	75	125				

Sample ID **N015566-011B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.642	1.0	10.00	13.91	77.3	75	125	21.84	0.911	20	

Sample ID **N015578-005B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100392**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/13/2015** SeqNo: **2001825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	253.614	5.0	10.00	241.9	117	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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2015

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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24A-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 1:00:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.058	0.022	0.050		mg/L	1	5/15/2015

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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24B-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 2:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.054	0.022	0.050		mg/L	1	5/15/2015

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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.95	0.022	0.050		mg/L	1	5/15/2015

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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 10:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.066	0.022	0.050		mg/L	1	5/15/2015

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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-203SMT
Lab Order:	N015566	**Collection Date:**	4/30/2015 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2015

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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2015

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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-203SMT
Lab Order:	N015566	**Collection Date:**	4/30/2015 8:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.071	0.022	0.050		mg/L	1	5/15/2015

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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-203
Lab Order:	N015566	**Collection Date:**	5/4/2015 2:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150515D** QC Batch: **R100396** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.11	0.022	0.050		mg/L	1	5/15/2015

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

Date: *26-May-15*

CLIENT: CH2M HILL
Work Order: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100396** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100396**
Client ID: **PBW** Batch ID: **R100396** TestNo: **SM4500-NO3** Analysis Date: **5/15/2015** SeqNo: **2002355**

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-R100396** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100396**
Client ID: **LCSW** Batch ID: **R100396** TestNo: **SM4500-NO3** Analysis Date: **5/15/2015** SeqNo: **2002356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.966	0.050	1.000	0	96.6	85	115				

Sample ID **N015566-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100396**
Client ID: **ZZZZZZ** Batch ID: **R100396** TestNo: **SM4500-NO3** Analysis Date: **5/15/2015** SeqNo: **2002360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.022	0.050	1.000	0.05810	96.4	75	125				

Sample ID **N015566-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100396**
Client ID: **ZZZZZZ** Batch ID: **R100396** TestNo: **SM4500-NO3** Analysis Date: **5/15/2015** SeqNo: **2002361**

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	1.000	0.05810	99.5	75	125	1.053	0	20	

Sample ID **N015566-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100396**
Client ID: **ZZZZZZ** Batch ID: **R100396** TestNo: **SM4500-NO3** Analysis Date: **5/15/2015** SeqNo: **2002381**

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	

Qualifiers:

B	Analyte detected in 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-122-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 8:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150508A**	QC Batch: **50363**				PrepDate	**5/6/2015**	Analyst: **CEI**
Arsenic	ND	0.016	0.10		µg/L	1	5/8/2015 11:42 AM
Manganese	12	0.023	0.50		µg/L	1	5/8/2015 11:42 AM
Molybdenum	120	0.029	0.50		µg/L	1	5/8/2015 11:42 AM
Selenium	ND	0.070	0.50		µg/L	1	5/8/2015 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24A-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 1:00:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150508A**	QC Batch: **50363**			PrepDate	**5/6/2015**		Analyst: **CEI**
Arsenic	ND	0.016	0.10		µg/L	1	5/8/2015 11:47 AM
Manganese	12	0.023	0.50		µg/L	1	5/8/2015 11:47 AM
Molybdenum	120	0.029	0.50		µg/L	1	5/8/2015 11:47 AM
Selenium	ND	0.070	0.50		µg/L	1	5/8/2015 11:47 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-24B-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 2:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150513A**	QC Batch: **50363**				PrepDate	**5/6/2015**	Analyst: **CEI**
Arsenic	2.3	0.032	0.20		µg/L	2	5/13/2015 10:49 AM
Manganese	ND	0.023	0.50		µg/L	1	5/8/2015 11:53 AM
Molybdenum	54	0.058	1.0		µg/L	2	5/13/2015 10:49 AM
Selenium	ND	0.14	1.0		µg/L	2	5/13/2015 10:49 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-203
Lab Order:	N015566	**Collection Date:**	4/29/2015 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150508A**	QC Batch: **50363**			PrepDate	**5/6/2015**		Analyst: **CEI**
Arsenic	1.2	0.016	0.10		µg/L	1	5/8/2015 11:58 AM
Manganese	ND	0.023	0.50		µg/L	1	5/8/2015 11:58 AM
Molybdenum	17	0.029	0.50		µg/L	1	5/8/2015 11:58 AM
Selenium	0.77	0.070	0.50		µg/L	1	5/8/2015 11:58 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

ANALYTICAL RESULTS

Print Date: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-060-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 1:12:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150513A**	QC Batch: **50363**				PrepDate	**5/6/2015**	Analyst: **CEI**
Arsenic	3.1	0.032	0.20		µg/L	2	5/13/2015 10:55 AM
Manganese	ND	0.023	0.50		µg/L	1	5/8/2015 12:04 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-080-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 2:46:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150513A**	QC Batch: **50363**				PrepDate	**5/6/2015**	Analyst: **CEI**
Arsenic	3.6	0.032	0.20		µg/L	2	5/13/2015 11:00 AM
Manganese	ND	0.023	0.50		µg/L	1	5/8/2015 12:09 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 10:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150513A**	QC Batch: **50385**			PrepDate		**5/7/2015**	Analyst: **CEI**
Arsenic	6.3	0.016	0.10		µg/L	1	5/13/2015 11:17 AM
Manganese	ND	0.023	0.50		µg/L	1	5/8/2015 02:10 PM
Molybdenum	90	0.15	2.5		µg/L	5	5/13/2015 11:23 AM
Selenium	ND	0.35	2.5		µg/L	5	5/13/2015 11:23 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38D-203SMT
Lab Order:	N015566	**Collection Date:**	4/30/2015 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150513A**	QC Batch: **50385**				PrepDate	**5/7/2015**	Analyst: **CEI**
Arsenic	6.8	0.016	0.10		µg/L	1	5/13/2015 12:18 PM
Manganese	ND	0.023	0.50		µg/L	1	5/8/2015 02:16 PM
Molybdenum	90	0.058	1.0		µg/L	2	5/13/2015 12:24 PM
Selenium	ND	0.14	1.0		µg/L	2	5/13/2015 12:24 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-203
Lab Order:	N015566	**Collection Date:**	4/30/2015 8:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150508A**	QC Batch: **50385**				PrepDate	**5/7/2015**	Analyst: **CEI**
Arsenic	13	0.016	0.10		µg/L	1	5/8/2015 02:21 PM
Manganese	240	0.11	2.5		µg/L	5	5/13/2015 12:33 PM
Molybdenum	38	0.029	0.50		µg/L	1	5/13/2015 12:28 PM
Selenium	ND	0.070	0.50		µg/L	1	5/13/2015 12:28 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-38S-203SMT
Lab Order:	N015566	**Collection Date:**	4/30/2015 8:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150508A**	QC Batch: **50385**				PrepDate	**5/7/2015**	Analyst: **CEI**
Arsenic	13	0.016	0.10		µg/L	1	5/8/2015 02:27 PM
Manganese	240	0.11	2.5		µg/L	5	5/13/2015 12:44 PM
Molybdenum	37	0.029	0.50		µg/L	1	5/13/2015 12:39 PM
Selenium	ND	0.070	0.50		µg/L	1	5/13/2015 12:39 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: *26-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72BR-200-203
Lab Order:	N015566	**Collection Date:**	5/4/2015 2:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015566-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150508A**	QC Batch: **50385**				PrepDate	**5/7/2015**	Analyst: **CEI**
Arsenic	12	0.016	0.10		µg/L	1	5/8/2015 02:32 PM
Manganese	ND	0.023	0.50		µg/L	1	5/8/2015 02:32 PM
Molybdenum	72	0.15	2.5		µg/L	5	5/19/2015 12:11 PM
Selenium	ND	0.35	2.5		µg/L	5	5/19/2015 12:11 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

Date: *26-May-15*

CLIENT: CH2M HILL
Work Order: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50363** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **PBW** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1998261**

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	0.086	0.50									
Selenium	ND	0.50									

Sample ID **LCS-50363** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **LCSW** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1998262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.173	0.10	10.00	0	91.7	85	115				
Manganese	97.769	0.50	100.0	0	97.8	85	115				
Molybdenum	10.001	0.50	10.00	0	100	85	115				
Selenium	8.564	0.50	10.00	0	85.6	85	115				

Sample ID **N015563-007B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1998266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.235	0.10	10.00	1.797	94.4	75	125				
Manganese	92.817	0.50	100.0	0	92.8	75	125				
Molybdenum	12.742	0.50	10.00	2.603	101	75	125				
Selenium	8.981	0.50	10.00	0.1057	88.7	75	125				

Sample ID **N015563-007B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1998267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.322	0.10	10.00	1.797	95.3	75	125	11.23	0.776	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015563-007B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1998267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.353	0.50	100.0	0	94.4	75	125	92.82	1.64	20	
Molybdenum	12.850	0.50	10.00	2.603	102	75	125	12.74	0.843	20	
Selenium	8.790	0.50	10.00	0.1057	86.8	75	125	8.981	2.15	20	

Sample ID **N015563-017B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/6/2015** RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50363** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1998280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.309	0.10	10.00	0.6289	96.8	75	125				
Manganese	92.743	0.50	100.0	0.1197	92.6	75	125				
Molybdenum	12.062	0.50	10.00	1.464	106	75	125				
Selenium	9.688	0.50	10.00	0.1648	95.2	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-50385	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100268
Client ID:	PBW	Batch ID:	50385	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2015	SeqNo:	1998302

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									

Sample ID	LCS-50385	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100268
Client ID:	LCSW	Batch ID:	50385	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2015	SeqNo:	1998303

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.452	0.10	10.00	0	94.5	85	115				
Manganese	96.399	0.50	100.0	0	96.4	85	115				

Sample ID	N015566-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100268
Client ID:	ZZZZZZ	Batch ID:	50385	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2015	SeqNo:	1998339

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	40.800	0.50	100.0	0	40.8	75	125				S

Sample ID	N015566-011B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100268
Client ID:	ZZZZZZ	Batch ID:	50385	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2015	SeqNo:	1998340

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	40.712	0.50	100.0	0	40.7	75	125	40.80	0.217	20	S

Sample ID	N015578-005B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100268
Client ID:	ZZZZZZ	Batch ID:	50385	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2015	SeqNo:	1998341

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.078	0.10	10.00	0.8889	102	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50385** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100392**
Client ID: **PBW** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/13/2015** SeqNo: **2002103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.074	0.50									
Selenium	ND	0.50									

Sample ID **LCS-50385** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100392**
Client ID: **LCSW** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/13/2015** SeqNo: **2002104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	10.932	0.50	10.00	0	109	85	115				
Selenium	9.069	0.50	10.00	0	90.7	85	115				

Sample ID **N015566-011B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100392**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/13/2015** SeqNo: **2002112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.934	0.10	10.00	6.320	96.1	75	125				

Sample ID **N015566-011B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100392**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/13/2015** SeqNo: **2002113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	97.910	2.5	10.00	89.79	81.2	75	125				
Selenium	9.464	2.5	10.00	0	94.6	75	125				

Sample ID **N015566-011B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100392**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/13/2015** SeqNo: **2002114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.920	0.10	10.00	6.320	96.0	75	125	15.93	0.0901	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015566-011B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100392**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/13/2015** SeqNo: **2002115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	98.166	2.5	10.00	89.79	83.8	75	125	97.91	0.261	20	
Selenium	10.801	2.5	10.00	0	108	75	125	9.464	13.2	20	

Sample ID **N015578-005B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2015** RunNo: **100392**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/13/2015** SeqNo: **2002129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	15.950	2.5	10.00	3.807	121	75	125				
Selenium	12.257	2.5	10.00	0.3610	119	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

5/5/2015 12:21:13 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/5/2015
COC Number: 5

			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	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-122-203	4/29/2015	8:00	Water	X	X	X	X	X	N015566 -1	3	
MW-24A-203	4/29/2015	13:00	Water	X	X	X	X	X	-2	3	
MW-24B-203	4/29/2015	14:36	Water	X	X	X	X	X	-3	3	
MW-63-065-203	4/29/2015	8:36	Water	X	X	X	X	X	-4	3	
MW-205-203	4/30/2015	6:45	Water	X					-5	1	
MW-206-203	4/30/2015	6:50	Water	X					-6	1	
MW-207-203	4/30/2015	15:32	Water	X					-7	1	
MW-208-203	4/30/2015	15:30	Water	X					-8	1	
MW-23-060-203	4/30/2015	13:12	Water	X	X	X			-9	2	
MW-23-080-203	4/30/2015	14:46	Water	X	X	X			-10	2	
MW-38D-203	4/30/2015	10:32	Water	X	X	X	X	X	-11	3	
MW-38D-203SMT	4/30/2015	9:10	Water	X	X	X	X	X	-12	3	
MW-38S-203	4/30/2015	8:36	Water	X	X	X	X	X	-13	3	

	Signatures	Date/Time
Approved by		5-5-15
Sampled by		1330
Relinquished by		
Received by		5/5/15 1330
Relinquished by		5/5/15 1825
Received by		5/5/15

Shipping Details

Method of Shipment: UPS
On Ice: (yes) / no 3.2°C VR#2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

April 7 - May 14, 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** *5/5/2015 12:21:14 PM* Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/5/2015
COC Number: 5

			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	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-38S-203SMT	4/30/2015	8:15	Water	X	X	X	X	X	N015566 - 14	3	
MW-72BR-200-203	5/4/2015	14:42	Water	X	X	X	X	X	1 - 15	3	
MW-209-203	5/5/2015	8:19	Water	X					1 - 16	1	
									TOTAL NUMBER OF CONTAINERS	36	

	Signatures	Date/Time
Approved by		5-5-15
Sampled by		1330
Relinquished by		
Received by		5/5/15 1800
Relinquished by		5/5/15
Received by		5/5/15 1925

Shipping Details
Method of Shipment: UPS
On Ice: (yes) / no 3.2°C
Airbill No: VR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 7 - May 14, 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:	5/5/2015	Workorder:	N015566
Rep sample Temp (Deg C):	3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 5/11/2015

Reviewed By: 05/12/15

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 **N015566-004A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 1.3882 * 1

= 1.3882

Reporting result in two significant figures,

Cr^{+6}, µg/L = 1.4

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 **N015566-002C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.0581 * 1

= 0.0581 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.058 mg/L

REB 5/18/2015

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 **N015566-004B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 1.2250074318 * 1 * (25/25)

= 1.2250074318

Reporting results in two significant figures,

Arsenic, ug/L = 1.2

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015566
Test Method: EPA 6020
Analysis Date: 5/8/2015

Matrix: Water
Batch No.: 50363

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015563-007B-DT 5X	Arsenic	µg/L	1.890359917	NA	1.797299799	5.18%	10
N015563-007B-DT 5X	Chromium	µg/L	0	NA	0.23400776	100.00%	10
N015563-007B-DT 5X	Manganese	µg/L	0	NA	0		10
N015563-007B-DT 5X	Molybdenum	µg/L	3.992396039	NA	2.602856218	53.39%	10
N015563-007B-DT 5X	Selenium	µg/L	0	NA	0.105671132	100.00%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015566
Test Method: EPA 6020
Analysis Date: 5/8/2015

Matrix: Water
Batch No.: 50385

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Mn. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015566-011B-DT 5X	Chromium	µg/L	16.11315272	NA	13.91042738	15.84%	10
N015566-011B-DT 5X	Manganese	µg/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015566
Test Method: EPA 6020
Analysis Date: 5/13/2015

Matrix: Water
Batch No.: 50385

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Se. The calculated concentration is < 25X RL.
Dilution test failed for As. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015566-011B-DT 5X	Arsenic	µg/L	7.164840867	FAIL	6.320280229	13.36%	10
N015566-011B-DT 25X	Molybdenum	µg/L	89.67851307	PASS	89.79006824	0.12%	10
N015566-011B-DT 25X	Selenium	µg/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories

Date: *20-May-15*

CLIENT: CH2M HILL
Work Order: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID:	**N015563-007B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:			RunNo:	**100268**
Client ID:	**ZZZZZZ**	Batch ID:	**50363**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**5/8/2015**		SeqNo:	**1998265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.116	0.10	10.00	1.797	93.2	80	120				
Manganese	93.251	0.50	100.0	0	93.3	80	120				
Molybdenum	12.828	0.50	10.00	2.603	102	80	120				
Selenium	9.039	0.50	10.00	0.1057	89.3	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		

CLIENT: CH2M HILL
Work Order: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N015566-011B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **100268**
Client ID: **ZZZZZZ**	Batch ID: **50385**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2015**	SeqNo: **1998338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	42.014	0.50	100.0	0	42.0	80	120				S

Sample ID: **N015566-011B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **100392**
Client ID: **ZZZZZZ**	Batch ID: **50385**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2015**	SeqNo: **2002108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.259	0.10	10.00	6.320	89.4	80	120				

Sample ID: **N015566-011B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **100392**
Client ID: **ZZZZZZ**	Batch ID: **50385**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2015**	SeqNo: **2002109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	97.487	2.5	10.00	89.79	77.0	80	120				S
Selenium	10.873	2.5	10.00	0	109	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID:	**N015563-007B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**100268**	
Client ID:	**ZZZZZZ**	Batch ID:	**50363**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**5/8/2015**	SeqNo:	**1997427**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.722	1.0	10.00	0.2340	94.9	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: N015566
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N015566-011B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **100268**
Client ID: **ZZZZZZ** Batch ID: **50385** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/8/2015** SeqNo: **1997500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.781	1.0	10.00	13.91	68.7	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		

May 21, 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.: N015569

RE: PG&E Topock, 658274.01.IM.OP.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 05, 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, 658274.01.IM.OP.00
Lab Order: N015569

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 N015567-001C-MS1 and N015567-001C-MSD1 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.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) on QC samples N015569-001B-MS2 and N015569-001B-MSD2 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.

ASSET Laboratories

Date: *21-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N015569
Contract No: IM3PLANT-EW

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015569-001A	PE-01-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-001B	PE-01-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-001C	PE-01-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-001D	PE-01-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-001E	PE-01-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-001F	PE-01-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-002A	TW-03D-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-002B	TW-03D-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-002C	TW-03D-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-002D	TW-03D-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-002E	TW-03D-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015
N015569-002F	TW-03D-230	Water	5/5/2015 7:30:00 AM	5/5/2015	5/21/2015

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150506C**	QC Batch: **R100215**			PrepDate			Analyst: **LR**
Specific Conductance	4200	0.10	0.10		umhos/cm	1	5/6/2015 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

ANALYTICAL RESULTS

Print Date: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150506C**	QC Batch: **R100215**			PrepDate			Analyst: **LR**
Specific Conductance	7500	0.10	0.10		umhos/cm	1	5/6/2015 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: *21-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N015567-001A DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **100215**
Client ID: **ZZZZZZ** Batch ID: **R100215** TestNo: **EPA 120.1** Analysis Date: **5/6/2015** SeqNo: **1992879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6800.000	0.10						6780	0.295	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: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150506B**	QC Batch: **R100214**			PrepDate			**Analyst: LR**
pH	7.6	0.10	0.10	H	pH Units	1	5/6/2015 04:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	5/6/2015 04:00 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-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150506B**	QC Batch: **R100214**			PrepDate			Analyst: **LR**
pH	7.1	0.10	0.10	H	pH Units	1	5/6/2015 04:00 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	5/6/2015 04:00 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: *21-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID	N015569-001F DUP	SampType:	DUP	TestCode:	150.1_4500H	Units:	pH Units	Prep Date:		RunNo:	100214
Client ID:	ZZZZZZ	Batch ID:	R100214	TestNo:	SM4500-H+B			Analysis Date:	5/6/2015	SeqNo:	1992845

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.640	0.10						7.580	0.788	10	H
Temp. at time of pH Analysis	22.800	0.10						22.90	0.438	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: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
				SM2540C			
RunID: **WETCHEM_150506G**	QC Batch: **50361**				PrepDate	**5/6/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2500	33	33		mg/L	1	5/6/2015 11:47 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150506G**	QC Batch: **50361**			PrepDate		**5/6/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	5/6/2015 11:47 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		

ASSET Laboratories

Date: *21-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-50361	MBLK	160.1_2540C	mg/L	5/6/2015	100235
Client ID: PBW	Batch ID: 50361	TestNo: SM2540C		Analysis Date: 5/6/2015	SeqNo: 1993517

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	SampType	TestCode	Units	Prep Date	RunNo
LCS-50361	LCS	160.1_2540C	mg/L	5/6/2015	100235
Client ID: LCSW	Batch ID: 50361	TestNo: SM2540C		Analysis Date: 5/6/2015	SeqNo: 1993518

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	970.000	10	1000	0	97.0	80	120				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015563-006D DUP	DUP	160.1_2540C	mg/L	5/6/2015	100235
Client ID: ZZZZZZ	Batch ID: 50361	TestNo: SM2540C		Analysis Date: 5/6/2015	SeqNo: 1993520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	298.000	10						296.0	0.673	5	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150507B**	QC Batch: **50380**			PrepDate		**5/7/2015**	Analyst: **JAA**
Calcium	120000	31	500		µg/L	1	5/7/2015 06:38 PM
Iron	ND	17	20		µg/L	1	5/7/2015 06:38 PM
Magnesium	24000	86	100		µg/L	1	5/7/2015 06:38 PM
Sodium	850000	1200	50000		µg/L	100	5/8/2015 08:02 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: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: ICP2_150507B	QC Batch: 50380			PrepDate		5/7/2015	Analyst: JAA
Calcium	250000	31	500		µg/L	1	5/7/2015 06:43 PM
Iron	ND	17	20		µg/L	1	5/7/2015 06:43 PM
Magnesium	29000	86	100		µg/L	1	5/7/2015 06:43 PM
Sodium	1500000	1200	50000		µg/L	100	5/8/2015 08:19 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-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID LCS1-50380 SampType: LCS TestCode: 200.7_WDPG Units: µg/L Prep Date: 5/7/2015 RunNo: 100254
Client ID: LCSW Batch ID: 50380 TestNo: EPA 200.7 Analysis Date: 5/7/2015 SeqNo: 1994139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9691.734	500	10000	0	96.9	85	115				
Iron	103.497	20	100.0	0	103	85	115				
Magnesium	10084.166	100	10000	0	101	85	115				

Sample ID N015567-001C-MS1 SampType: MS TestCode: 200.7_WDPG Units: µg/L Prep Date: 5/7/2015 RunNo: 100254
Client ID: ZZZZZZ Batch ID: 50380 TestNo: EPA 200.7 Analysis Date: 5/7/2015 SeqNo: 1994143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	240498.932	500	10000	151200	893	75	125				S
Iron	97.851	20	100.0	0	97.9	75	125				
Magnesium	39059.999	100	10000	20540	185	75	125				S

Sample ID N015567-001C-MSD SampType: MSD TestCode: 200.7_WDPG Units: µg/L Prep Date: 5/7/2015 RunNo: 100254
Client ID: ZZZZZZ Batch ID: 50380 TestNo: EPA 200.7 Analysis Date: 5/7/2015 SeqNo: 1994144

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	228207.363	500	10000	151200	770	75	125	240500	5.24	20	S
Iron	105.128	20	100.0	0	105	75	125	97.85	7.17	20	
Magnesium	37709.094	100	10000	20540	172	75	125	39060	3.52	20	S

Sample ID MB-50380 SampType: MBLK TestCode: 200.7_WDPG Units: µg/L Prep Date: 5/7/2015 RunNo: 100254
Client ID: PBW Batch ID: 50380 TestNo: EPA 200.7 Analysis Date: 5/7/2015 SeqNo: 1994159

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		

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-50380	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100279
Client ID:	PBW	Batch ID:	50380	TestNo:	EPA 200.7			Analysis Date:	5/8/2015	SeqNo:	1996184

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	28.880	500									

Sample ID	LCS2-50380	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100279
Client ID:	LCSW	Batch ID:	50380	TestNo:	EPA 200.7			Analysis Date:	5/8/2015	SeqNo:	1996185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19281.827	500	20000	0	96.4	85	115				

Sample ID	N015569-001B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100279
Client ID:	ZZZZZZ	Batch ID:	50380	TestNo:	EPA 200.7			Analysis Date:	5/8/2015	SeqNo:	1996190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	815709.408	50000	20000	848500	-164	75	125				S

Sample ID	N015569-001B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/7/2015	RunNo:	100279
Client ID:	ZZZZZZ	Batch ID:	50380	TestNo:	EPA 200.7			Analysis Date:	5/8/2015	SeqNo:	1996191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	799776.436	50000	20000	848500	-243	75	125	815700	1.97	20	S

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: ICP7_150506A	QC Batch: 50357			PrepDate		5/6/2015	Analyst: CEI
Manganese	57	0.023	0.50		µg/L	1	5/6/2015 04:16 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: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: ICP7_150506A	QC Batch: 50357				PrepDate	5/6/2015	Analyst: CEI
Manganese	ND	0.023	0.50		µg/L	1	5/6/2015 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

Date: *21-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	MB-50357	SampType:	MBLK	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/6/2015	RunNo:	100255
Client ID:	PBW	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994791

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

Sample ID	LCS-50357	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/6/2015	RunNo:	100255
Client ID:	LCSW	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994792

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.072	0.50	100.0	0	97.1	85	115				

Sample ID	N015565-001H-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/6/2015	RunNo:	100255
Client ID:	ZZZZZZ	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994798

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	86.631	0.50	100.0	0	86.6	75	125				

Sample ID	N015565-001H-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/6/2015	RunNo:	100255
Client ID:	ZZZZZZ	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994799

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	86.512	0.50	100.0	0	86.5	75	125	86.63	0.138	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150506A**	QC Batch: **R100271**			PrepDate			Analyst: **RB**
Hexavalent Chromium	2.9	0.015	0.20		µg/L	1	5/6/2015 05:53 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_150506A**	QC Batch: **50357**			PrepDate		**5/6/2015**	Analyst: **CEI**
Chromium	2.5	0.086	1.0		µg/L	1	5/6/2015 04:16 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: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150518E**	QC Batch: **R100433**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	700	2.8	20		µg/L	2	5/18/2015
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_150507A**	QC Batch: **50357**			PrepDate		**5/6/2015**	Analyst: **CEI**
Chromium	640	0.43	5.0		µg/L	5	5/7/2015 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		

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

Date: *21-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-50357	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/6/2015	RunNo:	100255
Client ID:	PBW	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994595

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

Sample ID	LCS-50357	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/6/2015	RunNo:	100255
Client ID:	LCSW	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994596

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.824	1.0	10.00	0	98.2	85	115				

Sample ID	N015565-001H-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/6/2015	RunNo:	100255
Client ID:	ZZZZZZ	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.034	1.0	10.00	0	90.3	75	125				

Sample ID	N015565-001H-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/6/2015	RunNo:	100255
Client ID:	ZZZZZZ	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.130	1.0	10.00	0	91.3	75	125	9.034	1.05	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: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	LCS-R100271	SampType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	LCSW	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.959	0.20	5.000	0	99.2	90	110				

Sample ID	MB-R100271	SampType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	PBW	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995911

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

Sample ID	N015565-001E-DUP	SampType: DUP	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995920

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.137	0.20						0.1309	0	20	

Sample ID	N015474-002A-MS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	32.160	1.0	25.00	7.747	97.7	90	110				

Sample ID	N015474-002A-MSD	SampType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995922

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	32.815	1.0	25.00	7.747	100	90	110	32.16	2.01	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N015567-002C-MS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.171	0.20	1.000	0.1918	97.9	90	110				

Sample ID	N015568-001B-MS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995940

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.556	0.20	1.000	0.5735	98.3	90	110				

Sample ID	N015567-001D-MS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1008.760	20	500.0	526.3	96.5	90	110				

Sample ID	N015569-001C-MS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 100271
Client ID:	ZZZZZZ	Batch ID: R100271	TestNo: EPA 218.6		Analysis Date: 5/6/2015	SeqNo: 1995947

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.870	0.20	5.000	2.866	100	90	110				

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274 01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R100433	LCS	3500_CrBPG	µg/L		100433
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
LCSW	R100433	SM 3500-Cr B		5/18/2015	2003861

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	97.412	10	100.0	0	97.4	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R100433	MBLK	3500_CrBPG	µg/L		100433
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
PBW	R100433	SM 3500-Cr B		5/18/2015	2003862

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

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015640-011AMS	MS	3500_CrBPG	µg/L		100433
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100433	SM 3500-Cr B		5/18/2015	2003864

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	493.680	10	250.0	227.1	107	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015640-011AMSD	MSD	3500_CrBPG	µg/L		100433
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100433	SM 3500-Cr B		5/18/2015	2003865

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	494.597	10	250.0	227.1	107	85	115	493.7	0.186	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015569-002DDUP	DUP	3500_CrBPG	µg/L		100433
Client ID	**Batch ID**	**TestNo**		**Analysis Date**	**SeqNo**
ZZZZZZ	R100433	SM 3500-Cr B		5/18/2015	2003868

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	702.266	20						699.6	0.375	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150506I**	QC Batch: **R100237**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	210	1.2	5.0		mg/L	1	5/6/2015 10:20 AM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	5/6/2015 10:20 AM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	5/6/2015 10:20 AM
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	5/6/2015 10:20 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-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150506I**	QC Batch: **R100237**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	170	1.2	5.0		mg/L	1	5/6/2015 10:20 AM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	5/6/2015 10:20 AM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	5/6/2015 10:20 AM
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	5/6/2015 10:20 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-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R100237** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100237**
Client ID: **LCSW** Batch ID: **R100237** TestNo: **SM 2320 B** Analysis Date: **5/6/2015** SeqNo: **1993574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	97.917	5.0	100.0	0	97.9	85	115				
Alkalinity, Total (As CaCO3)	100.000	5.0	100.0	0	100	85	115				

Sample ID **N015567-001A DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100237**
Client ID: **ZZZZZZ** Batch ID: **R100237** TestNo: **SM 2320 B** Analysis Date: **5/6/2015** SeqNo: **1993576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	179.167	5.0						179.2	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)	179.167	5.0						179.2	0	30	

Sample ID **N015569-002A MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100237**
Client ID: **ZZZZZZ** Batch ID: **R100237** TestNo: **SM 2320 B** Analysis Date: **5/6/2015** SeqNo: **1993579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	264.583	5.0	100.0	172.9	91.7	75	125				
Alkalinity, Total (As CaCO3)	264.583	5.0	100.0	172.9	91.7	75	125				

Sample ID **N015569-002A MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100237**
Client ID: **ZZZZZZ** Batch ID: **R100237** TestNo: **SM 2320 B** Analysis Date: **5/6/2015** SeqNo: **1993580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	264.583	5.0	100.0	172.9	91.7	75	125	264.6	0	20	
Alkalinity, Total (As CaCO3)	264.583	5.0	100.0	172.9	91.7	75	125	264.6	0	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	MB-R100237	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	100237
Client ID:	PBW	Batch ID:	R100237	TestNo:	SM 2320 B			Analysis Date:	5/6/2015	SeqNo:	1993595

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									

Qualifiers:

B	Analyte detected in 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-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: IC2_150513A	QC Batch: R100345			PrepDate			Analyst: QBM
Chloride	1000	6.3	100		mg/L	200	5/13/2015 11:38 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: IC2_150513A	QC Batch: R100345			PrepDate			Analyst: QBM
Sulfate	350	1.6	25		mg/L	50	5/13/2015 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: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150513A**	QC Batch:	**R100345**		PrepDate			Analyst: **QBM**
Chloride	2100	16	250		mg/L	500	5/13/2015 12:07 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_150513A**	QC Batch:	**R100345**		PrepDate			Analyst: **QBM**
Sulfate	470	3.3	50		mg/L	100	5/13/2015 12:22 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

Date: *21-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R100345_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	PBW	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000193

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

Sample ID	LCS-R100345_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	LCSW	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000194

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.577	0.50	2.500	0	103	90	110				

Sample ID	N015569-001ADUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	ZZZZZZ	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1009.600	100						1021	1.12	20	

Sample ID	N015569-002AMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	ZZZZZZ	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3438.000	250	1250	2100	107	80	120				

Sample ID	N015569-002AMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	ZZZZZZ	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000201

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3466.500	250	1250	2100	109	80	120	3438	0.826	20	

Qualifiers:

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

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N015608-002CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	ZZZZZZ	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000210

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	119.960	10	50.00	68.52	103	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: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R100345_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	PBW	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000228

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

Sample ID	LCS-R100345_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	LCSW	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000229

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.128	0.50	5.000	0	103	90	110				

Sample ID	N015567-001ADUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	ZZZZZZ	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	460.750	25						460.6	0.0217	20	

Sample ID	N015567-002BMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	ZZZZZZ	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	704.250	25	250.0	447.5	103	80	120				

Sample ID	N015567-002BMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100345
Client ID:	ZZZZZZ	Batch ID:	R100345	TestNo:	EPA 300.0			Analysis Date:	5/13/2015	SeqNo:	2000238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	710.400	25	250.0	447.5	105	80	120	704.2	0.869	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150515D**	QC Batch: **R100396**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2015

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: *21-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-230
Lab Order:	N015569	**Collection Date:**	5/5/2015 7:30:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015569-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150515D**	QC Batch: **R100396**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	3.2	0.11	0.25		mg/L	5	5/15/2015

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

Date: *21-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R100396	MBLK	4500N03F_W	mg/L		100396
Client ID: PBW	Batch ID: R100396	TestNo: SM4500-NO3		Analysis Date: 5/15/2015	SeqNo: 2002355

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	SampType	TestCode	Units	Prep Date	RunNo
LCS-R100396	LCS	4500N03F_W	mg/L		100396
Client ID: LCSW	Batch ID: R100396	TestNo: SM4500-NO3		Analysis Date: 5/15/2015	SeqNo: 2002356

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.966	0.050	1.000	0	96.6	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015566-002CMS	MS	4500N03F_W	mg/L		100396
Client ID: ZZZZZZ	Batch ID: R100396	TestNo: SM4500-NO3		Analysis Date: 5/15/2015	SeqNo: 2002360

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.022	0.050	1.000	0.05810	96.4	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015566-002CMSD	MSD	4500N03F_W	mg/L		100396
Client ID: ZZZZZZ	Batch ID: R100396	TestNo: SM4500-NO3		Analysis Date: 5/15/2015	SeqNo: 2002361

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	1.000	0.05810	99.5	75	125	1.053	0	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N015566-001CDUP	DUP	4500N03F_W	mg/L		100396
Client ID: ZZZZZZ	Batch ID: R100396	TestNo: SM4500-NO3		Analysis Date: 5/15/2015	SeqNo: 2002381

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	

Qualifiers:

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

LIST OF ANALYST/S

WORK ORDER: N015569

ANALYST LIST

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0, SM 3500-Cr B
Claire Ignacio	EPA 200.8
Jasper Aquino	EPA 200.7
Lilia Ramit	EPA 120.1, SM 2540C, SM 4500 H+B, SM 2320B
Ryan Balilu	EPA 218.6, SM 4500-NO3F

SAMPLE RECEIVING ITEMS

CH2MHILL CHAIN OF CUSTODY RECORD 5/4/2015 3:13:42 PM Page 1 OF 1

Project Name PG&E Topock
Location PG&E Topock
Project Number 658274.01.IM.OP.00
Project Manager Scott O'Donnell
Sample Manager Shawn Duffy

Task Order
Project IM3PLANT-EW-230
Turnaround Time 10 Days
Shipping Date: 5/5/2015
COC Number: 230

			Container:	1 Liter Poly	1 Liter Poly	1 Liter Poly	500 ml Poly	500 ml Poly	250 ml 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			
			Filtered:	NA	NA	NA	Lab	Lab	NA	NA	NA	NA			
			Holding Time:	7	7	7	180	180	1	28	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)	SM3500-Cr6 LabFilt	TDS (SM2540C)		Number of Containers	COMMENTS
PE-01-230	5/5/2015	7:30	Water	X	X	X	X	X	X	X		X	NO15569-1	4	
TW-03D-230	5/5/2015	7:30	Water	X	X	X	X	X		X	X	X	1 -2	4	
													TOTAL NUMBER OF CONTAINERS	8	

	Signatures	Date/Time
Approved by	[signature]	5-5-15 07:30
Sampled by	[signature]	5-5-15 07:30
Relinquished by	[signature]	5-5-15 07:30
Received by	[signature]	5/5/15 1820
Relinquished by	[signature]	5/5/15 1925
Received by	[signature]	5/5/15

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 2 - 9oc 1P#2
Airbill No:
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:	5/5/2015	Workorder:	N015569
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 5/11/2015

Reviewed By: 05/12/15

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 **N015569-002A,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(57.1536-57.0650)*1000000}{20}$$

$$= 4430 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 4400 mg/L

Julia Ramit 5/8/2015

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:5/7/15								
MB-50361	100	63.9837	63.9844	7	1	7		
LCS-50361	100	75.7415	75.8385	970	1	970		
N015563-006D	100	55.5377	55.5673	296	1	296	415	0.713
N015563-006D DUP	100	61.2254	61.2552	298	1	298	415	0.718
N015563-007D	100	63.8117	63.8365	248	1	248	347	0.715
N015563-008D	100	63.525	63.5519	269	1	269	399	0.674
N015567-001A	20	64.0853	64.1653	800	5	4000	6780	0.590
N015567-002B	20	64.2444	64.3255	811	5	4055	6790	0.597
N015568-001A	20	61.3451	61.4322	871	5	4355	7340	0.593
N015569-001A	30	63.9484	64.023	746	3.33333333	2486.66667	4160	0.598
N015569-002A	20	57.065	57.1536	886	5	4430	7530	0.588

Julia Ramit 5/8/2015

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 **N015569-002B**, the concentration in ug/L is calculated as follows:

Calcium, ug/L = 245.9646157 * 1 * (25/25) * 1000

= 245964.6157

Reporting results in two significant figures,

Calcium, ug/L = 250000

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015569
Test Method: EPA 200.7
Analysis Date: 05/07/15

Matrix: Water
Batch No.: 50380

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

Comments:

Analyzed By: Jasper A. Aquino

Dilution test is not applicable to Fe. The calculated value is < 25X RL.
Dilution test failed for Ca and Mg.

Sample ID	Analyte	Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N015567-001C-DT 5X	Calcium	µg/L	215012.4078	FAIL	151197.7054	42.21%	10
N015567-001C-DT 5X	Iron	µg/L	0	NA	0		10
N015567-001C-DT 5X	Magnesium	µg/L	30572.59718	FAIL	20542.23369	48.83%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015569
Test Method: EPA 200.7
Analysis Date: 05/08/15

Matrix: Water
Batch No.: 50380

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

Comments:

Analyzed By: Jasper A. Aquino

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015569-001B-DT 500X	Sodium	µg/L	907128.5345	PASS	848467.8309	6.91%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *10-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID: N015567-001C-PS	SampType: PS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date:	RunNo: 100254
Client ID: ZZZZZZ	Batch ID: 50380	TestNo: EPA 200.7		Analysis Date: 5/7/2015	SeqNo: 1994142

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	239273.268	500	10000	151200	881	80	120				S
Iron	97.602	20	100.0	0	97.6	80	120				
Magnesium	38960.510	100	10000	20540	184	80	120				S

Sample ID: N015569-001B-PS	SampType: PS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date:	RunNo: 100279
Client ID: ZZZZZZ	Batch ID: 50380	TestNo: EPA 200.7		Analysis Date: 5/8/2015	SeqNo: 1996189

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	812224.556	50000	20000	848500	-181	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 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 **N015569-001B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 2.53385840502094 * 1 * (25/25)

= 2.53385840502094

Reporting results in two significant figures,

Chromium, ug/L = 2.5

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015569
Test Method: EPA 200.8
Analysis Date: 5/6/2015

Matrix: Water
Batch No.: 50357

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Mn. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015565-001H-DT 5X	Chromium	µg/L	0	NA	0		10
N015565-001H-DT 5X	Manganese	µg/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories

Date: *08-May-15*

CLIENT: CH2M HILL
Work Order: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N015565-001H-PS	SampType:	PS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	100255
Client ID:	ZZZZZZ	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994797

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.045	0.50	100.0	0	88.0	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: N015569
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	N015565-001H-PS	SampType:	PS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	100255
Client ID:	ZZZZZZ	Batch ID:	50357	TestNo:	EPA 200.8			Analysis Date:	5/6/2015	SeqNo:	1994601

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.289	1.0	10.00	0	92.9	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		

Sample ID: **N015569-001A @ pH 7.69**

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) (12.00mL)

= **0.020833 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 = (10.10) (0.020833 N) (1) * 1000

= 210.4133 **mg/L**

Reporting results in two significant figures,

= 210 **mg/L** as CaCO3

Julia Ramit 5/8/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

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

= (0) (0.020833 N) (1) * 1000

= **0**

Total Alkalinity

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

= (10.10 mL) (0.020833) (1) * 1000

= 210.4133 **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 $CaCO_3$ = 210.4133 **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 $CaCO_3$ = 210 **mg/L**

Julia Ramit 5/8/2015

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 **N015569-001A** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 6.975 * 50

= 348.75

Reporting results in two significant figures,

Sulfate, mg/L = 350

5/15/2015

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 **N015569-002D,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 349.82 * 2

= 699.64 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 700

5/20/2015

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 **N015569-002C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6341 * 5

= 3.1705 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 3.2 mg/L

May 28, 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.: N015639

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 12, 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:** *28-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015639

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 218.6:

Dilution was necessary for samples N015639-004 (MW-41D-203) and N015639-005 (MW-50-095-203) due to matrix interference. Samples were analyzed at lower dilution however Matrix Spike was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Dilution was necessary for sample N015639-006 (MW-71-035-203) due to matrix interference. Sample was analyzed at lower dilution however retention time criteria and Matrix Spike 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.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N015639-004 and N015639-011 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 N015639-013B-MS is outside recovery criteria for Manganese possibly due to matrix interference. 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
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

Date: *28-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015639
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015639-001A	MW-14-203	Water	5/6/2015 12:27:00 PM	5/12/2015	5/28/2015
N015639-001B	MW-14-203	Water	5/6/2015 12:27:00 PM	5/12/2015	5/28/2015
N015639-001C	MW-14-203	Water	5/6/2015 12:27:00 PM	5/12/2015	5/28/2015
N015639-002A	MW-21-203	Water	5/6/2015 8:30:00 AM	5/12/2015	5/28/2015
N015639-002B	MW-21-203	Water	5/6/2015 8:30:00 AM	5/12/2015	5/28/2015
N015639-002C	MW-21-203	Water	5/6/2015 8:30:00 AM	5/12/2015	5/28/2015
N015639-002D	MW-21-203	Water	5/6/2015 8:30:00 AM	5/12/2015	5/28/2015
N015639-003A	MW-21-203-EB	Water	5/6/2015 6:55:00 AM	5/12/2015	5/28/2015
N015639-003B	MW-21-203-EB	Water	5/6/2015 6:55:00 AM	5/12/2015	5/28/2015
N015639-004A	MW-41D-203	Water	5/6/2015 10:27:00 AM	5/12/2015	5/28/2015
N015639-004B	MW-41D-203	Water	5/6/2015 10:27:00 AM	5/12/2015	5/28/2015
N015639-004C	MW-41D-203	Water	5/6/2015 10:27:00 AM	5/12/2015	5/28/2015
N015639-005A	MW-50-095-203	Water	5/6/2015 2:22:00 PM	5/12/2015	5/28/2015
N015639-005B	MW-50-095-203	Water	5/6/2015 2:22:00 PM	5/12/2015	5/28/2015
N015639-006A	MW-71-035-203	Water	5/6/2015 7:55:00 AM	5/12/2015	5/28/2015
N015639-006B	MW-71-035-203	Water	5/6/2015 7:55:00 AM	5/12/2015	5/28/2015
N015639-006C	MW-71-035-203	Water	5/6/2015 7:55:00 AM	5/12/2015	5/28/2015
N015639-007A	MW-73-080-203	Water	5/6/2015 7:25:00 AM	5/12/2015	5/28/2015
N015639-007B	MW-73-080-203	Water	5/6/2015 7:25:00 AM	5/12/2015	5/28/2015
N015639-007C	MW-73-080-203	Water	5/6/2015 7:25:00 AM	5/12/2015	5/28/2015
N015639-008A	MW-210-203	Water	5/7/2015 6:36:00 AM	5/12/2015	5/28/2015
N015639-009A	MW-211-203	Water	5/7/2015 6:34:00 AM	5/12/2015	5/28/2015
N015639-010A	MW-35-060-203	Water	5/7/2015 11:27:00 AM	5/12/2015	5/28/2015
N015639-010B	MW-35-060-203	Water	5/7/2015 11:27:00 AM	5/12/2015	5/28/2015
N015639-010C	MW-35-060-203	Water	5/7/2015 11:27:00 AM	5/12/2015	5/28/2015
N015639-011A	MW-35-135-203	Water	5/7/2015 12:15:00 PM	5/12/2015	5/28/2015
N015639-011B	MW-35-135-203	Water	5/7/2015 12:15:00 PM	5/12/2015	5/28/2015
N015639-011C	MW-35-135-203	Water	5/7/2015 12:15:00 PM	5/12/2015	5/28/2015
N015639-012A	MW-47-055-203	Water	5/7/2015 8:50:00 AM	5/12/2015	5/28/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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
Project: PG&E Topock
Lab Order: N015639
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015639-012B	MW-47-055-203	Water	5/7/2015 8:50:00 AM	5/12/2015	5/28/2015
N015639-013A	MW-47-115-203	Water	5/7/2015 9:57:00 AM	5/12/2015	5/28/2015
N015639-013B	MW-47-115-203	Water	5/7/2015 9:57:00 AM	5/12/2015	5/28/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 12:27:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	16	0.075	1.0		µg/L	5	5/19/2015 05:01 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	18	0.086	1.0		µg/L	1	5/14/2015 02:51 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	1.5	0.015	0.20		µg/L	1	5/19/2015 03:45 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	1.4	0.086	1.0		µg/L	1	5/14/2015 03:02 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 10:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/19/2015 09:07 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/14/2015 03:24 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-095-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 2:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150521A** QC Batch: **R100490** PrepDate							Analyst: **RB**
Hexavalent Chromium	14	0.030	0.40		µg/L	2	5/21/2015 04:01 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	13	0.086	1.0		µg/L	1	5/14/2015 03:35 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 7:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/19/2015 09:26 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/14/2015 03:46 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 7:25:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	42	0.075	1.0		µg/L	5	5/19/2015 05:58 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	41	0.086	1.0		µg/L	1	5/14/2015 03:58 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-210-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 6:36:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B**	QC Batch: **R100491**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/19/2015 06:17 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-211-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 6:34:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150521A**	QC Batch: **R100490**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/21/2015 04:22 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 11:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	24	0.075	1.0		µg/L	5	5/19/2015 07:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	24	0.086	1.0		µg/L	1	5/14/2015 04:09 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 12:15:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	28	0.075	1.0		µg/L	5	5/19/2015 07:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	25	0.086	1.0		µg/L	1	5/14/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	15	0.075	1.0		µg/L	5	5/19/2015 07:51 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	15	0.086	1.0		µg/L	1	5/14/2015 04:43 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-115-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 9:57:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150519B** QC Batch: **R100491** PrepDate							Analyst: **RB**
Hexavalent Chromium	23	0.075	1.0		µg/L	5	5/19/2015 08:10 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150514A** QC Batch: **50437** PrepDate **5/14/2015**							Analyst: **CEI**
Chromium	22	0.086	1.0		µg/L	1	5/14/2015 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

Date: *28-May-15*

CLIENT: CH2M HILL
Work Order: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100490** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **PBW** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006579**

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-R100490** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **LCSW** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.898	0.20	5.000	0	98.0	90	110				

Sample ID **N015761-002A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.117	0.20						0.1110	0	20	

Sample ID **N015761-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.111	0.20	1.000	0.1110	100	90	110				

Sample ID **N015761-002A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.1110	103	90	110	1.110	2.83	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: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015639-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	23.522	0.40	10.00	13.54	99.8	90	110				

Sample ID **N015639-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.183	0.20	1.000	0.1671	102	90	110				

Sample ID **N015640-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.688	1.0	5.000	0.4885	104	90	110				

Sample ID **N015640-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	214.778	4.0	100.0	113.9	101	90	110				

Sample ID **N015640-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	189.588	4.0	100.0	91.46	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: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015640-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.625	1.0	25.00	10.11	98.0	90	110				

Sample ID **N015640-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	210.704	4.0	100.0	111.7	99.0	90	110				

Sample ID **N015640-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	231.862	4.0	100.0	132.9	98.9	90	110				

Sample ID **N015640-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008182**

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	0.1356	97.7	90	110				

Sample ID **N015640-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.186	0.20	1.000	0.1536	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: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100491** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **PBW** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.016	0.20									

Sample ID **LCS-R100491** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **LCSW** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.871	0.20	5.000	0	97.4	90	110				

Sample ID **N015639-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.532	0.20	1.000	1.533	99.8	90	110				

Sample ID **N015639-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.078	1.0						16.44	2.22	20	

Sample ID **N015639-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.677	1.0	25.00	16.44	97.0	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: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015639-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	41.225	1.0	25.00	16.44	99.1	90	110	40.68	1.34	20	

Sample ID **N015639-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	66.024	1.0	25.00	41.76	97.1	90	110				

Sample ID **N015639-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.136	0.20	1.000	0.1158	102	90	110				

Sample ID **N015639-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	47.852	1.0	25.00	23.51	97.4	90	110				

Sample ID **N015639-011A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	50.675	1.0	25.00	27.58	92.4	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		

CLIENT: CH2M HILL
Work Order: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015639-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.632	1.0	25.00	15.34	97.2	90	110				

Sample ID **N015639-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.653	1.0	25.00	23.05	102	90	110				

Sample ID **N015639-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.149	1.0	5.000	0.2190	98.6	90	110				

Sample ID **N015639-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100491**
Client ID: **ZZZZZZ** Batch ID: **R100491** TestNo: **EPA 218.6** Analysis Date: **5/19/2015** SeqNo: **2006625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.956	1.0	5.000	0	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: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-50437** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **PBW** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2000616**

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

Sample ID **LCS-50437** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **LCSW** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2000617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.479	1.0	10.00	0	105	85	115				

Sample ID **N015658-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.316	1.0	10.00	1.754	106	75	125				

Sample ID **N015658-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.183	1.0	10.00	1.754	104	75	125	12.32	1.08	20	

Sample ID **N015639-013B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	29.760	1.0	10.00	21.95	78.1	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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 12:27:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	4.1	0.22	0.50		mg/L	10	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	2.2	0.11	0.25		mg/L	5	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 10:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150527D**	QC Batch: **R100544**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.52	0.022	0.050		mg/L	1	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-71-035-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 7:55:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.37	0.022	0.050		mg/L	1	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 7:25:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150527D**	QC Batch: **R100544**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	4.1	0.11	0.25		mg/L	5	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 11:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150527D**	QC Batch: **R100544**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.5	0.044	0.10		mg/L	2	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 12:15:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150527D**	QC Batch: **R100544**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.044	0.10		mg/L	2	5/27/2015

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: *28-May-15*

CLIENT: CH2M HILL
Work Order: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100544** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **PBW** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008755**

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-R100544** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **LCSW** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.947	0.050	1.000	0	94.7	85	115				

Sample ID **N015639-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **ZZZZZZ** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.562	0.50						4.076	11.3	20	

Sample ID **N015639-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **ZZZZZZ** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	14.188	0.50	10.00	4.076	101	75	125				

Sample ID **N015639-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **ZZZZZZ** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.823	0.50	10.00	4.076	97.5	75	125	14.19	2.61	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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-14-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 12:27:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150514A**	QC Batch: **50437**			PrepDate	**5/14/2015**		Analyst: **CEI**
Arsenic	0.88	0.016	0.10		µg/L	1	5/14/2015 02:51 PM
Manganese	ND	0.023	0.50		µg/L	1	5/14/2015 02:51 PM
Molybdenum	15	0.029	0.50		µg/L	1	5/14/2015 02:51 PM
Selenium	2.3	0.070	0.50		µg/L	1	5/14/2015 02:51 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 8:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150514A**	QC Batch: **50437**				PrepDate	**5/14/2015**	Analyst: **CEI**
Molybdenum	88	0.029	0.50		µg/L	1	5/14/2015 03:02 PM
Selenium	15	0.070	0.50		µg/L	1	5/14/2015 03:02 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-41D-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 10:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150514A**	QC Batch: **50437**				PrepDate	**5/14/2015**	Analyst: **CEI**
Arsenic	1.8	0.016	0.10		µg/L	1	5/14/2015 03:24 PM
Manganese	ND	0.023	0.50		µg/L	1	5/14/2015 03:24 PM
Molybdenum	99	0.15	2.5		µg/L	5	5/14/2015 03:30 PM
Selenium	ND	0.35	2.5		µg/L	5	5/14/2015 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: *28-May-15*

CLIENT: CH2M HILL
Lab Order: N015639
Project: PG&E Topock
Lab ID: N015639-006

Client Sample ID: MW-71-035-203
Collection Date: 5/6/2015 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150514A**	QC Batch: **50437**			PrepDate	**5/14/2015**		Analyst: **CEI**
Arsenic	10	0.016	0.10		µg/L	1	5/14/2015 03:46 PM
Manganese	3900	0.57	12		µg/L	25	5/19/2015 12:56 PM
Molybdenum	78	0.029	0.50		µg/L	1	5/14/2015 03:46 PM
Selenium	ND	0.070	0.50		µg/L	1	5/14/2015 03:46 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-73-080-203
Lab Order:	N015639	**Collection Date:**	5/6/2015 7:25:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150514A**	QC Batch: **50437**			PrepDate	**5/14/2015**		Analyst: **CEI**
Arsenic	1.5	0.016	0.10		µg/L	1	5/14/2015 03:58 PM
Manganese	ND	0.023	0.50		µg/L	1	5/14/2015 03:58 PM
Molybdenum	25	0.029	0.50		µg/L	1	5/14/2015 03:58 PM
Selenium	3.9	0.070	0.50		µg/L	1	5/14/2015 03:58 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 11:27:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150514A**	QC Batch: **50437**			PrepDate	**5/14/2015**		Analyst: **CEI**
Arsenic	1.1	0.016	0.10		µg/L	1	5/14/2015 04:09 PM
Manganese	ND	0.023	0.50		µg/L	1	5/14/2015 04:09 PM
Molybdenum	10	0.029	0.50		µg/L	1	5/14/2015 04:09 PM
Selenium	1.0	0.070	0.50		µg/L	1	5/19/2015 01:02 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-135-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 12:15:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150514A**	QC Batch: **50437**			PrepDate	**5/14/2015**		Analyst: **CEI**
Arsenic	0.85	0.016	0.10		µg/L	1	5/14/2015 04:32 PM
Manganese	ND	0.023	0.50		µg/L	1	5/14/2015 04:32 PM
Molybdenum	20	0.15	2.5		µg/L	5	5/14/2015 04:38 PM
Selenium	0.98	0.070	0.50		µg/L	1	5/14/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-47-055-203
Lab Order:	N015639	**Collection Date:**	5/7/2015 8:50:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015639-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150514A**	QC Batch: **50437**			PrepDate	**5/14/2015**		Analyst: **CEI**
Arsenic	1.0	0.016	0.10		µg/L	1	5/14/2015 04:43 PM
Manganese	ND	0.023	0.50		µg/L	1	5/14/2015 04:43 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

Date: *28-May-15*

CLIENT: CH2M HILL
Work Order: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50437** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **PBW** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002569**

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-50437** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **LCSW** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.781	0.10	10.00	0	108	85	115				
Manganese	103.270	0.50	100.0	0	103	85	115				
Molybdenum	9.974	0.50	10.00	0	99.7	85	115				
Selenium	10.669	0.50	10.00	0	107	85	115				

Sample ID **N015658-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.632	0.10	10.00	0.9967	106	75	125				
Manganese	101.598	0.50	100.0	0	102	75	125				
Molybdenum	14.699	0.50	10.00	2.842	119	75	125				
Selenium	10.013	0.50	10.00	0.3803	96.3	75	125				

Sample ID **N015658-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.346	0.10	10.00	0.9967	103	75	125	11.63	2.50	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: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015658-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.374	0.50	100.0	0	101	75	125	101.6	0.221	20	
Molybdenum	14.477	0.50	10.00	2.842	116	75	125	14.70	1.52	20	
Selenium	10.142	0.50	10.00	0.3803	97.6	75	125	10.01	1.28	20	

Sample ID **N015639-013B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.818	0.10	10.00	1.988	98.3	75	125				
Manganese	30.486	0.50	100.0	0	30.5	75	125				S
Selenium	9.472	0.50	10.00	1.049	84.2	75	125				

Sample ID **N015639-013B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/14/2015** RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	33.011	2.5	10.00	23.23	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		

CH2MHILL

CHAIN OF CUSTODY RECORD

5/12/2015 2:03:06 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/12/2015
COC Number: 7

			Container:	250 ml Poly	2x250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(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	Field	NA			
			Holding Time:	28	28	28	180	180	180	180	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Cr6 (SM3500B) Field Filtered	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A-cr) Field Filtered Chromium - HOLD	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-14-203	5/6/2015	12:27	Water	X			X	X	X		X	N015639-1	3	
MW-21-203	5/6/2015	8:30	Water		X			X	X	X	X	-2	5	
MW-21-203-EB	5/6/2015	6:55	Water	X				X				-3	2	Hold
MW-41D-203	5/6/2015	10:27	Water	X			X	X	X		X	-4	3	
MW-50-095-203	5/6/2015	14:22	Water	X				X				-5	2	
MW-71-035-203	5/6/2015	7:55	Water	X			X	X	X		X	-6	3	
MW-73-080-203	5/6/2015	7:25	Water	X			X	X	X		X	-7	3	
MW-210-203	5/7/2015	6:36	Water	X								-8	1	
MW-211-203	5/7/2015	6:34	Water	X								-9	1	
MW-35-060-203	5/7/2015	11:27	Water	X			X	X	X		X	-10	3	
MW-35-135-203	5/7/2015	12:15	Water	X			X	X	X		X	-11	3	
MW-47-055-203	5/7/2015	8:50	Water	X			X	X				-12	2	
MW-47-115-203	5/7/2015	9:57	Water	X				X				-13	2	

	Signatures	Date/Time
Approved by		5-12-15
Sampled by	[signature]	1525
Relinquished by	[signature]	
Received by	[signature]	5/12/15 1525
Relinquished by	[signature]	5/12/15 1745
Received by	[signature]	5/12/15

Shipping Details

Method of Shipment: courier
On Ice: yes / no 5 of 12 2.9 oc (R#2)
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
April 7 - May 14, 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:	5/12/2015	Workorder:	N015639
Rep sample Temp (Deg C):	3.1/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 5/19/2015

Reviewed By: 05/19/15

7Sample 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 **N015639-005A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 6.7693 * 2

= 13.5386

Reporting result in two significant figures,

Cr^{+6}, µg/L = 14

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 **N015639-001C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0..4076* 10

= 4.076 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 4.1 mg/L

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 **N015639-002B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 1.3894899723 * 1 * (25/25)

= 1.3894899723

Reporting results in two significant figures,

Chromium, ug/L = 1.4

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015639
Test Method: EPA 6020
Analysis Date: 5/14/2015

Matrix: Water
Batch No.: 50437

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015658-001B-DT 5X	Arsenic	µg/L	1.246778555	NA	0.996658071	25.10%	10
N015658-001B-DT 5X	Chromium	µg/L	1.811636825	NA	1.75371126	3.30%	10
N015658-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N015658-001B-DT 5X	Molybdenum	µg/L	2.726227907	NA	2.842393264	4.09%	10
N015658-001B-DT 5X	Selenium	µg/L	0.488940535	NA	0.38032497	28.56%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *27-May-15*

CLIENT: CH2M HILL
Work Order: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015658-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100356**
Client ID: **ZZZZZZ** Batch ID: **50437** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2015** SeqNo: **2002573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.422	0.10	10.00	0.9967	104	80	120				
Manganese	101.989	0.50	100.0	0	102	80	120				
Molybdenum	14.350	0.50	10.00	2.842	115	80	120				
Selenium	9.792	0.50	10.00	0.3803	94.1	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: N015639
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N015658-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**100356**
Client ID:	**ZZZZZZ**	Batch ID:	**50437**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**5/14/2015**			SeqNo:	**2002462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.173	1.0	10.00	1.754	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		

May 28, 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.: N015640

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 12, 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:** *28-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015640

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 218.6:

Dilution was necessary for samples N015640-001 (MW-48-203), N015640-005 (MW-128-203) , and N015640-007 (MW-57-185-203) due to matrix interference. Samples were analyzed at lower dilution however Matrix Spike was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N015640-007, N015640-009 and N015640-010 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.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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

Date: *28-May-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015640
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015640-001A	MW-48-203	Water	5/7/2015 7:05:00 AM	5/12/2015	5/28/2015
N015640-001B	MW-48-203	Water	5/7/2015 7:05:00 AM	5/12/2015	5/28/2015
N015640-002A	MW-70-105-203	Water	5/7/2015 1:58:00 PM	5/12/2015	5/28/2015
N015640-002B	MW-70-105-203	Water	5/7/2015 1:58:00 PM	5/12/2015	5/28/2015
N015640-002C	MW-70-105-203	Water	5/7/2015 1:58:00 PM	5/12/2015	5/28/2015
N015640-003A	MW-212-203	Water	5/8/2015 9:10:00 AM	5/12/2015	5/28/2015
N015640-004A	MW-213-203	Water	5/8/2015 9:12:00 AM	5/12/2015	5/28/2015
N015640-005A	MW-128-203	Water	5/11/2015 7:00:00 AM	5/12/2015	5/28/2015
N015640-005B	MW-128-203	Water	5/11/2015 7:00:00 AM	5/12/2015	5/28/2015
N015640-005C	MW-128-203	Water	5/11/2015 7:00:00 AM	5/12/2015	5/28/2015
N015640-006A	MW-25-203	Water	5/11/2015 2:24:00 PM	5/12/2015	5/28/2015
N015640-006B	MW-25-203	Water	5/11/2015 2:24:00 PM	5/12/2015	5/28/2015
N015640-006C	MW-25-203	Water	5/11/2015 2:24:00 PM	5/12/2015	5/28/2015
N015640-007A	MW-57-185-203	Water	5/11/2015 9:26:00 AM	5/12/2015	5/28/2015
N015640-007B	MW-57-185-203	Water	5/11/2015 9:26:00 AM	5/12/2015	5/28/2015
N015640-007C	MW-57-185-203	Water	5/11/2015 9:26:00 AM	5/12/2015	5/28/2015
N015640-008A	MW-65-160-203	Water	5/11/2015 11:00:00 AM	5/12/2015	5/28/2015
N015640-008B	MW-65-160-203	Water	5/11/2015 11:00:00 AM	5/12/2015	5/28/2015
N015640-008C	MW-65-160-203	Water	5/11/2015 11:00:00 AM	5/12/2015	5/28/2015
N015640-009A	MW-65-225-203	Water	5/11/2015 11:28:00 AM	5/12/2015	5/28/2015
N015640-009B	MW-65-225-203	Water	5/11/2015 11:28:00 AM	5/12/2015	5/28/2015
N015640-009C	MW-65-225-203	Water	5/11/2015 11:28:00 AM	5/12/2015	5/28/2015
N015640-010A	MW-72-080-203	Water	5/11/2015 1:26:00 PM	5/12/2015	5/28/2015
N015640-010B	MW-72-080-203	Water	5/11/2015 1:26:00 PM	5/12/2015	5/28/2015
N015640-010C	MW-72-080-203	Water	5/11/2015 1:26:00 PM	5/12/2015	5/28/2015
N015640-011A	MW-09-203	Water	5/12/2015 11:30:00 AM	5/12/2015	5/28/2015
N015640-011B	MW-09-203	Water	5/12/2015 11:30:00 AM	5/12/2015	5/28/2015
N015640-011C	MW-09-203	Water	5/12/2015 11:30:00 AM	5/12/2015	5/28/2015
N015640-012A	MW-10-203	Water	5/12/2015 12:10:00 PM	5/12/2015	5/28/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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
Project: PG&E Topock
Lab Order: N015640
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015640-012B	MW-10-203	Water	5/12/2015 12:10:00 PM	5/12/2015	5/28/2015
N015640-012C	MW-10-203	Water	5/12/2015 12:10:00 PM	5/12/2015	5/28/2015
N015640-013A	MW-11-203	Water	5/12/2015 12:48:00 PM	5/12/2015	5/28/2015
N015640-013B	MW-11-203	Water	5/12/2015 12:48:00 PM	5/12/2015	5/28/2015
N015640-013C	MW-11-203	Water	5/12/2015 12:48:00 PM	5/12/2015	5/28/2015
N015640-014A	MW-214-203	Water	5/12/2015 7:15:00 AM	5/12/2015	5/28/2015
N015640-015A	MW-215-203	Water	5/12/2015 7:20:00 AM	5/12/2015	5/28/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-48-203
Lab Order:	N015640	**Collection Date:**	5/7/2015 7:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150521A** QC Batch: **R100490** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/21/2015 04:42 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150520A** QC Batch: **50469** PrepDate **5/18/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/20/2015 02:39 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-203
Lab Order:	N015640	**Collection Date:**	5/7/2015 1:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150520A** QC Batch: **R100480** PrepDate							Analyst: **RB**
Hexavalent Chromium	150	0.30	4.0		µg/L	20	5/20/2015 01:34 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150520A** QC Batch: **50469** PrepDate **5/18/2015**							Analyst: **CEI**
Chromium	130	0.086	1.0		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-212-203
Lab Order:	N015640	**Collection Date:**	5/8/2015 9:10:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150520A**	QC Batch: **R100480**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-213-203
Lab Order:	N015640	**Collection Date:**	5/8/2015 9:12:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150520A**	QC Batch: **R100480**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150521A**	QC Batch: **R100490**			PrepDate			Analyst: **RB**
Hexavalent Chromium	110	0.30	4.0		µg/L	20	5/21/2015 05:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Chromium	110	0.086	1.0		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 2:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150521A** QC Batch: **R100490** PrepDate							Analyst: **RB**
Hexavalent Chromium	91	0.30	4.0		µg/L	20	5/21/2015 05:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150520A** QC Batch: **50469** PrepDate **5/18/2015**							Analyst: **CEI**
Chromium	87	0.086	1.0		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 9:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150521A** QC Batch: **R100490**				PrepDate			Analyst: **RB**
Hexavalent Chromium	10	0.075	1.0		µg/L	5	5/21/2015 06:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150520A** QC Batch: **50469**				PrepDate	**5/18/2015**		Analyst: **CEI**
Chromium	9.0	0.086	1.0		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 11:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150521A** QC Batch: **R100490** PrepDate							Analyst: **RB**
Hexavalent Chromium	110	0.30	4.0		µg/L	20	5/21/2015 06:26 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150520A** QC Batch: **50469** PrepDate **5/18/2015**							Analyst: **CEI**
Chromium	110	0.086	1.0		µg/L	1	5/20/2015 03:46 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 11:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150520A**	QC Batch: **R100480**			PrepDate			Analyst: **RB**
Hexavalent Chromium	160	0.30	4.0		µg/L	20	5/20/2015 04:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Chromium	140	0.086	1.0		µg/L	1	5/20/2015 03:57 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

ANALYTICAL RESULTS

Print Date: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 1:26:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150520A** QC Batch: **R100480** PrepDate							Analyst: **RB**
Hexavalent Chromium	92	0.30	4.0		µg/L	20	5/20/2015 04:24 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150520A** QC Batch: **50469** PrepDate **5/18/2015**							Analyst: **CEI**
Chromium	85	0.086	1.0		µg/L	1	5/20/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 11:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150518E**	QC Batch: **R100433**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	230	1.4	10		µg/L	1	5/18/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Chromium	230	0.43	5.0		µg/L	5	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 12:10:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150518E**	QC Batch: **R100433**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	280	1.4	10		µg/L	1	5/18/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Chromium	290	0.43	5.0		µg/L	5	5/20/2015 04:47 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 12:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150521A**	QC Batch: **R100490**			PrepDate			Analyst: **RB**
Hexavalent Chromium	130	0.30	4.0		µg/L	20	5/21/2015 06:46 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Chromium	130	0.086	1.0		µg/L	1	5/20/2015 05:03 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-214-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150521A**	QC Batch: **R100490**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/21/2015 07:06 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-215-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 7:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150521A**	QC Batch: **R100490**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/21/2015 07:26 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: *28-May-15*

CLIENT: CH2M HILL
Work Order: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100480** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **PBW** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006052**

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-R100480** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **LCSW** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.886	0.20	5.000	0	97.7	90	110				

Sample ID **N015677-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **ZZZZZZ** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.019	0.20						0	0	20	

Sample ID **N015677-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **ZZZZZZ** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.947	0.20	1.000	0	94.7	90	110				

Sample ID **N015677-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **ZZZZZZ** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.949	0.20	1.000	0	94.9	90	110	0.9473	0.137	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: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015640-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **ZZZZZZ** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	248.302	4.0	100.0	149.9	98.4	90	110				

Sample ID **N015640-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **ZZZZZZ** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006067**

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	0.1087	99.5	90	110				

Sample ID **N015640-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **ZZZZZZ** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0.09560	100	90	110				

Sample ID **N015640-009A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **ZZZZZZ** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	253.736	4.0	100.0	156.5	97.2	90	110				

Sample ID **N015640-010A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100480**
Client ID: **ZZZZZZ** Batch ID: **R100480** TestNo: **EPA 218.6** Analysis Date: **5/20/2015** SeqNo: **2006075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	188.778	4.0	100.0	92.04	96.7	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: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100490** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **PBW** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006579**

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-R100490** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **LCSW** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.898	0.20	5.000	0	98.0	90	110				

Sample ID **N015761-002A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.117	0.20						0.1110	0	20	

Sample ID **N015761-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.111	0.20	1.000	0.1110	100	90	110				

Sample ID **N015761-002A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2006585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.1110	103	90	110	1.110	2.83	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: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015639-005A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100490
Client ID:	ZZZZZZ	Batch ID:	R100490	TestNo:	EPA 218.6			Analysis Date:	5/21/2015	SeqNo:	2008164

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	23.522	0.40	10.00	13.54	99.8	90	110				

Sample ID	N015639-009A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100490
Client ID:	ZZZZZZ	Batch ID:	R100490	TestNo:	EPA 218.6			Analysis Date:	5/21/2015	SeqNo:	2008166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.183	0.20	1.000	0.1671	102	90	110				

Sample ID	N015640-001A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100490
Client ID:	ZZZZZZ	Batch ID:	R100490	TestNo:	EPA 218.6			Analysis Date:	5/21/2015	SeqNo:	2008168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.688	1.0	5.000	0.4885	104	90	110				

Sample ID	N015640-005A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100490
Client ID:	ZZZZZZ	Batch ID:	R100490	TestNo:	EPA 218.6			Analysis Date:	5/21/2015	SeqNo:	2008170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	214.778	4.0	100.0	113.9	101	90	110				

Sample ID	N015640-006A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100490
Client ID:	ZZZZZZ	Batch ID:	R100490	TestNo:	EPA 218.6			Analysis Date:	5/21/2015	SeqNo:	2008172

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	189.588	4.0	100.0	91.46	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: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015640-007A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.625	1.0	25.00	10.11	98.0	90	110				

Sample ID **N015640-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	210.704	4.0	100.0	111.7	99.0	90	110				

Sample ID **N015640-013A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	231.862	4.0	100.0	132.9	98.9	90	110				

Sample ID **N015640-014A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008182**

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	0.1356	97.7	90	110				

Sample ID **N015640-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100490**
Client ID: **ZZZZZZ** Batch ID: **R100490** TestNo: **EPA 218.6** Analysis Date: **5/21/2015** SeqNo: **2008184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.186	0.20	1.000	0.1536	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: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R100433** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100433**
Client ID: **LCSW** Batch ID: **R100433** TestNo: **SM 3500-Cr B** Analysis Date: **5/18/2015** SeqNo: **2003861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	97.412	10	100.0	0	97.4	85	115				

Sample ID **MB-R100433** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100433**
Client ID: **PBW** Batch ID: **R100433** TestNo: **SM 3500-Cr B** Analysis Date: **5/18/2015** SeqNo: **2003862**

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

Sample ID **N015640-011AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100433**
Client ID: **ZZZZZZ** Batch ID: **R100433** TestNo: **SM 3500-Cr B** Analysis Date: **5/18/2015** SeqNo: **2003864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	493.680	10	250.0	227.1	107	85	115				

Sample ID **N015640-011AMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100433**
Client ID: **ZZZZZZ** Batch ID: **R100433** TestNo: **SM 3500-Cr B** Analysis Date: **5/18/2015** SeqNo: **2003865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	494.597	10	250.0	227.1	107	85	115	493.7	0.186	20	

Sample ID **N015569-002DDUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100433**
Client ID: **ZZZZZZ** Batch ID: **R100433** TestNo: **SM 3500-Cr B** Analysis Date: **5/18/2015** SeqNo: **2003868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	702.266	20						699.6	0.375	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: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-50469	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/18/2015	RunNo:	100476
Client ID:	PBW	Batch ID:	50469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/20/2015	SeqNo:	2005783

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

Sample ID	LCS-50469	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/18/2015	RunNo:	100476
Client ID:	LCSW	Batch ID:	50469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/20/2015	SeqNo:	2005784

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.264	1.0	10.00	0	113	85	115				

Sample ID	N015657-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/18/2015	RunNo:	100476
Client ID:	ZZZZZZ	Batch ID:	50469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/20/2015	SeqNo:	2005788

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.888	1.0	10.00	1.685	112	75	125				

Sample ID	N015657-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/18/2015	RunNo:	100476
Client ID:	ZZZZZZ	Batch ID:	50469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/20/2015	SeqNo:	2005789

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.744	1.0	10.00	1.685	111	75	125	12.89	1.12	20	

Sample ID	N015640-012B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/18/2015	RunNo:	100476
Client ID:	ZZZZZZ	Batch ID:	50469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/20/2015	SeqNo:	2005815

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	300.755	5.0	10.00	292.2	85.8	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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-203
Lab Order:	N015640	**Collection Date:**	5/7/2015 1:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.9	0.11	0.25		mg/L	5	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	13	0.44	1.0		mg/L	20	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 2:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	9.2	0.22	0.50		mg/L	10	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 9:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 11:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 11:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150527D**	QC Batch: **R100544**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.2	0.044	0.10		mg/L	2	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 1:26:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.79	0.022	0.050		mg/L	1	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 11:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	10	0.22	0.50		mg/L	10	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 12:10:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	5/27/2015

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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 12:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150527D** QC Batch: **R100544** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	6.6	0.11	0.25		mg/L	5	5/27/2015

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: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100544** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **PBW** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008755**

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-R100544** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **LCSW** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.947	0.050	1.000	0	94.7	85	115				

Sample ID **N015639-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **ZZZZZZ** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.562	0.50						4.076	11.3	20	

Sample ID **N015639-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **ZZZZZZ** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	14.188	0.50	10.00	4.076	101	75	125				

Sample ID **N015639-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100544**
Client ID: **ZZZZZZ** Batch ID: **R100544** TestNo: **SM4500-NO3** Analysis Date: **5/27/2015** SeqNo: **2008783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.823	0.50	10.00	4.076	97.5	75	125	14.19	2.61	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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70-105-203
Lab Order:	N015640	**Collection Date:**	5/7/2015 1:58:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Arsenic	4.3	0.016	0.10		µg/L	1	5/20/2015 02:50 PM
Manganese	89	0.023	0.50		µg/L	1	5/20/2015 02:50 PM
Molybdenum	79	0.029	0.50		µg/L	1	5/20/2015 02:50 PM
Selenium	3.3	0.070	0.50		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-128-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Arsenic	0.64	0.016	0.10		µg/L	1	5/20/2015 03:12 PM
Manganese	ND	0.023	0.50		µg/L	1	5/20/2015 03:12 PM
Molybdenum	26	0.029	0.50		µg/L	1	5/20/2015 03:12 PM
Selenium	7.2	0.070	0.50		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-25-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 2:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Arsenic	1.1	0.016	0.10		µg/L	1	5/20/2015 03:23 PM
Manganese	ND	0.023	0.50		µg/L	1	5/20/2015 03:23 PM
Molybdenum	2.4	0.029	0.50		µg/L	1	5/20/2015 03:23 PM
Selenium	6.1	0.070	0.50		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 9:26:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Arsenic	15	0.079	0.50		µg/L	5	5/20/2015 03:40 PM
Manganese	220	0.11	2.5		µg/L	5	5/20/2015 03:40 PM
Molybdenum	88	0.15	2.5		µg/L	5	5/20/2015 03:40 PM
Selenium	ND	0.35	2.5		µg/L	5	5/20/2015 03:40 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-160-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 11:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**				PrepDate	**5/18/2015**	Analyst: **CEI**
Arsenic	0.62	0.016	0.10		µg/L	1	5/20/2015 03:46 PM
Manganese	ND	0.023	0.50		µg/L	1	5/20/2015 03:46 PM
Molybdenum	26	0.029	0.50		µg/L	1	5/20/2015 03:46 PM
Selenium	7.6	0.070	0.50		µg/L	1	5/20/2015 03:46 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-65-225-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 11:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Arsenic	2.9	0.079	0.50		µg/L	5	5/20/2015 04:13 PM
Manganese	ND	0.023	0.50		µg/L	1	5/20/2015 03:57 PM
Molybdenum	49	0.15	2.5		µg/L	5	5/20/2015 04:13 PM
Selenium	ND	0.35	2.5		µg/L	5	5/20/2015 04:13 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-72-080-203
Lab Order:	N015640	**Collection Date:**	5/11/2015 1:26:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Arsenic	11	0.079	0.50		µg/L	5	5/20/2015 04:24 PM
Manganese	ND	0.023	0.50		µg/L	1	5/20/2015 04:19 PM
Molybdenum	75	0.15	2.5		µg/L	5	5/20/2015 04:24 PM
Selenium	ND	0.35	2.5		µg/L	5	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-09-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 11:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**			PrepDate	**5/18/2015**		Analyst: **CEI**
Arsenic	1.7	0.016	0.10		µg/L	1	5/20/2015 04:30 PM
Manganese	ND	0.023	0.50		µg/L	1	5/20/2015 04:30 PM
Molybdenum	3.0	0.029	0.50		µg/L	1	5/20/2015 04:30 PM
Selenium	5.1	0.070	0.50		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-10-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 12:10:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**				PrepDate	**5/18/2015**	Analyst: **CEI**
Molybdenum	26	0.029	0.50		µg/L	1	5/20/2015 04:41 PM
Selenium	6.2	0.070	0.50		µg/L	1	5/20/2015 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: *28-May-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-11-203
Lab Order:	N015640	**Collection Date:**	5/12/2015 12:48:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015640-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150520A**	QC Batch: **50469**				PrepDate	**5/18/2015**	Analyst: **CEI**
Arsenic	1.4	0.016	0.10		µg/L	1	5/20/2015 05:03 PM
Manganese	ND	0.023	0.50		µg/L	1	5/20/2015 05:03 PM
Molybdenum	6.0	0.029	0.50		µg/L	1	5/20/2015 05:03 PM
Selenium	4.8	0.070	0.50		µg/L	1	5/20/2015 05:03 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		

ASSET Laboratories

Date: *28-May-15*

CLIENT: CH2M HILL
Work Order: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50469** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/18/2015** RunNo: **100476**
Client ID: **PBW** Batch ID: **50469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/20/2015** SeqNo: **2005858**

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-50469** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/18/2015** RunNo: **100476**
Client ID: **LCSW** Batch ID: **50469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/20/2015** SeqNo: **2005859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.126	0.10	10.00	0	111	85	115				
Manganese	112.007	0.50	100.0	0	112	85	115				
Molybdenum	11.489	0.50	10.00	0	115	85	115				
Selenium	10.470	0.50	10.00	0	105	85	115				

Sample ID **N015657-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/18/2015** RunNo: **100476**
Client ID: **ZZZZZZ** Batch ID: **50469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/20/2015** SeqNo: **2005863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.206	0.10	10.00	1.046	112	75	125				
Manganese	108.606	0.50	100.0	0	109	75	125				
Molybdenum	14.912	0.50	10.00	2.466	124	75	125				
Selenium	11.125	0.50	10.00	0.4503	107	75	125				

Sample ID **N015657-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/18/2015** RunNo: **100476**
Client ID: **ZZZZZZ** Batch ID: **50469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/20/2015** SeqNo: **2005864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.414	0.10	10.00	1.046	114	75	125	12.21	1.68	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: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015657-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/18/2015** RunNo: **100476**
Client ID: **ZZZZZZ** Batch ID: **50469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/20/2015** SeqNo: **2005864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	108.345	0.50	100.0	0	108	75	125	108.6	0.240	20	
Molybdenum	14.637	0.50	10.00	2.466	122	75	125	14.91	1.86	20	
Selenium	11.342	0.50	10.00	0.4503	109	75	125	11.13	1.93	20	

Sample ID **N015640-012B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/18/2015** RunNo: **100476**
Client ID: **ZZZZZZ** Batch ID: **50469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/20/2015** SeqNo: **2005889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.249	0.10	10.00	2.971	113	75	125				
Manganese	95.848	0.50	100.0	0	95.8	75	125				
Molybdenum	37.894	0.50	10.00	26.13	118	75	125				
Selenium	16.258	0.50	10.00	6.154	101	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

5/12/2015 2:03:09 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/12/2015
COC Number: 7

			Container:	250 ml Poly	2x250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(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	Field	NA			
			Holding Time:	28	28	28	180	180	180	180	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Cr6 (SM3500B) Field Filtered	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A-cr) Field Filtered Chromium - HOLD	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-48-203	5/7/2015	7:05	Water	X				X				N015640-1	2	
MW-70-105-203	5/7/2015	13:58	Water	X			X	X	X		X	-2	3	
MW-212-203	5/8/2015	9:10	Water	X								-3	1	
MW-213-203	5/8/2015	9:12	Water	X								-4	1	
MW-128-203	5/11/2015	7:00	Water	X			X	X	X		X	-5	3	
MW-25-203	5/11/2015	14:24	Water	X			X	X	X		X	-6	3	
MW-57-185-203	5/11/2015	9:26	Water	X			X	X	X		X	-7	3	
MW-65-160-203	5/11/2015	11:00	Water	X			X	X	X		X	-8	3	
MW-65-225-203	5/11/2015	11:28	Water	X			X	X	X		X	-9	3	
MW-72-080-203	5/11/2015	13:26	Water	X			X	X	X		X	-10	3	
MW-09-203	5/12/2015	11:30	Water			X	X	X	X		X	-11	3	
MW-10-203	5/12/2015	12:10	Water			X		X	X		X	-12	3	
MW-11-203	5/12/2015	12:48	Water	X			X	X	X		X	-13	3	
MW-214-203	5/12/2015	7:15	Water	X								-14	1	

	Signatures	Date/Time
Approved by		5-12-15
Sampled by		1525
Relinquished by		
Received by		5/12/15 1525
Relinquished by		5/12/15 1745
Received by		5/12/15 1745

Shipping Details

Method of Shipment: courier
On Ice: yes / no 3-10C, 2-9C
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:

Sample Custody and Marlon

Special Instructions:

April 7 - May 14, 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** *5/12/2015 2:03:10 PM* Page 3 OF 3

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/12/2015
COC Number: 7

			Container:	250 ml Poly	2x250 ml Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1x500 ml Poly	125 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(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	Field	NA			
			Holding Time:	28	28	28	180	180	180	180	28			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Cr6 (SM3500B) Field Filtered	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Metals (6020A-cr) Field Filtered Chromium - HOLD	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-215-203	5/12/2015	7:20	Water	X								N015640-15	1	
												TOTAL NUMBER OF CONTAINERS	69	

	Signatures	Date/Time
Approved by		5-12-15
Sampled by		1525
Relinquished by		
Received by		5/12/15 1525
Relinquished by		5/12/15 1745
Received by		5/12/15 1745

Shipping Details
Method of Shipment: courier
On Ice: yes / no 3.1°C 2.9°C
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 7 - May 14, 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:	5/12/2015	Workorder:	N015640
Rep sample Temp (Deg C):	3.1/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 5/19/2015

Reviewed By: 05/19/15

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 **N015640-002A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 7.4952 * 20

= 149.904

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 **N015640-011A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 227.091 * 1

= 227.091 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 230

5/20/2015

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 **N015640-002C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0..7816* 5

= 3.908 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 3.9 mg/L

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 **N015640-002B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 4.34089429677227 * 1 * (25/25)

= 4.34089429677227

Reporting results in two significant figures,

Arsenic, ug/L = 4.3

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015640
Test Method: EPA 6020
Analysis Date: 5/20/2015

Matrix: Water
Batch No.: 50469

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015657-001B-DT 5X	Arsenic	µg/L	1.062241546	NA	1.046232166	1.53%	10
N015657-001B-DT 5X	Chromium	µg/L	2.741984998	NA	1.685087978	62.72%	10
N015657-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N015657-001B-DT 5X	Molybdenum	µg/L	2.408652089	NA	2.466380758	2.34%	10
N015657-001B-DT 5X	Selenium	µg/L	0.375898334	NA	0.450266292	16.52%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *21-May-15*

CLIENT: CH2M HILL
Work Order: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N015657-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**100476**
Client ID:	**ZZZZZZ**	Batch ID:	**50469**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**5/20/2015**	SeqNo:	**2005862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.452	0.10	10.00	1.046	114	80	120				
Manganese	107.671	0.50	100.0	0	108	80	120				
Molybdenum	14.770	0.50	10.00	2.466	123	80	120				S
Selenium	11.124	0.50	10.00	0.4503	107	80	120				

MS/MSD of Mn is within criteria.

5/27/2015

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		

CLIENT: CH2M HILL
Work Order: N015640
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N015657-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:				RunNo:	**100476**
Client ID:	**ZZZZZZ**	Batch ID:	**50469**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**5/20/2015**			SeqNo:	**2005787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.788	1.0	10.00	1.685	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		

June 05, 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.: N015741

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 19, 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.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N015741-002 (MW-40D-203SMT) due to matrix interference. Sample was analyzed at lower dilution however Matrix Spike 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.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N015741-002, N015741-007 and N015741-013 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.

Dilution was necessary on some analytes for sample N015741-001 due to matrix spikes not meeting internal standard criteria possibly due to matrix interference. Matrix spikes were analyzed with dilution and internal standard met method criteria. Sample was reported at dilution that meet matrix spikes internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N015741-001B-MS and N015741-001B-MSD possibly due to matrix interference. 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
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

Date: *05-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015741
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015741-001A	MW-40D-203	Water	5/12/2015 2:42:00 PM	5/19/2015	6/5/2015
N015741-001B	MW-40D-203	Water	5/12/2015 2:42:00 PM	5/19/2015	6/5/2015
N015741-001C	MW-40D-203	Water	5/12/2015 2:42:00 PM	5/19/2015	6/5/2015
N015741-002A	MW-40D-203SMT	Water	5/12/2015 1:55:00 PM	5/19/2015	6/5/2015
N015741-002B	MW-40D-203SMT	Water	5/12/2015 1:55:00 PM	5/19/2015	6/5/2015
N015741-002C	MW-40D-203SMT	Water	5/12/2015 1:55:00 PM	5/19/2015	6/5/2015
N015741-003A	MW-127-203	Water	5/13/2015 7:00:00 AM	5/19/2015	6/5/2015
N015741-003B	MW-127-203	Water	5/13/2015 7:00:00 AM	5/19/2015	6/5/2015
N015741-003C	MW-127-203	Water	5/13/2015 7:00:00 AM	5/19/2015	6/5/2015
N015741-004A	MW-216-203	Water	5/13/2015 7:18:00 AM	5/19/2015	6/5/2015
N015741-005A	MW-217-203	Water	5/13/2015 7:15:00 AM	5/19/2015	6/5/2015
N015741-006A	MW-31-060-203	Water	5/13/2015 3:06:00 PM	5/19/2015	6/5/2015
N015741-006B	MW-31-060-203	Water	5/13/2015 3:06:00 PM	5/19/2015	6/5/2015
N015741-007A	MW-61-110-203	Water	5/13/2015 10:54:00 AM	5/19/2015	6/5/2015
N015741-007B	MW-61-110-203	Water	5/13/2015 10:54:00 AM	5/19/2015	6/5/2015
N015741-007C	MW-61-110-203	Water	5/13/2015 10:54:00 AM	5/19/2015	6/5/2015
N015741-008A	MW-62-065-203	Water	5/13/2015 9:52:00 AM	5/19/2015	6/5/2015
N015741-008B	MW-62-065-203	Water	5/13/2015 9:52:00 AM	5/19/2015	6/5/2015
N015741-008C	MW-62-065-203	Water	5/13/2015 9:52:00 AM	5/19/2015	6/5/2015
N015741-009A	MW-66-165-203	Water	5/13/2015 1:22:00 PM	5/19/2015	6/5/2015
N015741-009B	MW-66-165-203	Water	5/13/2015 1:22:00 PM	5/19/2015	6/5/2015
N015741-009C	MW-66-165-203	Water	5/13/2015 1:22:00 PM	5/19/2015	6/5/2015
N015741-010A	MW-129-203	Water	5/14/2015 7:00:00 AM	5/19/2015	6/5/2015
N015741-010B	MW-129-203	Water	5/14/2015 7:00:00 AM	5/19/2015	6/5/2015
N015741-010C	MW-129-203	Water	5/14/2015 7:00:00 AM	5/19/2015	6/5/2015
N015741-011A	MW-19-203	Water	5/14/2015 12:28:00 PM	5/19/2015	6/5/2015
N015741-011B	MW-19-203	Water	5/14/2015 12:28:00 PM	5/19/2015	6/5/2015
N015741-012A	MW-218-203	Water	5/14/2015 6:15:00 AM	5/19/2015	6/5/2015
N015741-013A	MW-60-125-203	Water	5/14/2015 9:46:00 AM	5/19/2015	6/5/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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
Project: PG&E Topock
Lab Order: N015741
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015741-013B	MW-60-125-203	Water	5/14/2015 9:46:00 AM	5/19/2015	6/5/2015
N015741-013C	MW-60-125-203	Water	5/14/2015 9:46:00 AM	5/19/2015	6/5/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-203
Lab Order:	N015741	**Collection Date:**	5/12/2015 2:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150528A** QC Batch: **R100566** PrepDate							Analyst: **RB**
Hexavalent Chromium	120	0.30	4.0		µg/L	20	5/28/2015 01:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150529B** QC Batch: **50494** PrepDate **5/21/2015**							Analyst: **CEI**
Chromium	110	0.086	1.0		µg/L	1	5/29/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-203SMT
Lab Order:	N015741	**Collection Date:**	5/12/2015 1:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150602A** QC Batch: **R100636**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	6/2/2015 08:52 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150529B** QC Batch: **50494**				PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/29/2015 12:16 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-127-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150528A** QC Batch: **R100566** PrepDate							Analyst: **RB**
Hexavalent Chromium	580	0.75	10		µg/L	50	5/28/2015 06:27 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150529B** QC Batch: **50494** PrepDate **5/21/2015**							Analyst: **CEI**
Chromium	620	0.43	5.0		µg/L	5	5/29/2015 12:32 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-216-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 7:18:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150528A**	QC Batch: **R100566**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/28/2015 12:29 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-217-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 7:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150528A**	QC Batch: **R100566**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/28/2015 02:39 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-060-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 3:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	480	1.4	10		µg/L	1	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	490	0.43	5.0		µg/L	5	5/29/2015 12:43 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 10:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	440	1.4	10		µg/L	1	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	500	0.43	5.0		µg/L	5	5/29/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 9:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150528A** QC Batch: **R100566** PrepDate							Analyst: **RB**
Hexavalent Chromium	580	0.75	10		µg/L	50	5/28/2015 03:49 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150529B** QC Batch: **50494** PrepDate **5/21/2015**							Analyst: **CEI**
Chromium	620	0.43	5.0		µg/L	5	5/29/2015 04:34 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 1:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	650	1.4	10		µg/L	1	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	760	0.43	5.0		µg/L	5	5/29/2015 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

ANALYTICAL RESULTS

Print Date: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-203
Lab Order:	N015741	**Collection Date:**	5/14/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	980	6.9	50		µg/L	5	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150604A**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	1100	2.1	25		µg/L	25	6/4/2015 06:16 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-19-203
Lab Order:	N015741	**Collection Date:**	5/14/2015 12:28:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	630	1.4	10		µg/L	1	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate		**5/21/2015**	Analyst: **CEI**
Chromium	690	0.43	5.0		µg/L	5	5/29/2015 05:18 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-218-203
Lab Order:	N015741	**Collection Date:**	5/14/2015 6:15:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150528A**	QC Batch: **R100566**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/28/2015 12:49 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-203
Lab Order:	N015741	**Collection Date:**	5/14/2015 9:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	1100	2.8	20		µg/L	2	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150604A**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	1200	2.1	25		µg/L	25	6/4/2015 06:22 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

Date: *05-Jun-15*

CLIENT: CH2M HILL
Work Order: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100566** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **PBW** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009780**

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-R100566** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **LCSW** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.001	0.20	5.000	0	100	90	110				

Sample ID **N015741-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009784**

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	0.09480	105	90	110				

Sample ID **N015741-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.133	0.20	1.000	0.1096	102	90	110				

Sample ID **N015741-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	118.326	4.0						117.5	0.682	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: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015741-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	214.316	4.0	100.0	117.5	96.8	90	110				

Sample ID **N015741-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	216.754	4.0	100.0	117.5	99.2	90	110	214.3	1.13	20	

Sample ID **N015741-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009794**

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	0.1182	102	90	110				

Sample ID **N015741-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	837.665	10	250.0	580.5	103	90	110				

Sample ID **N015742-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009801**

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	0.1651	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: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015742-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.186	0.20	1.000	0.1592	103	90	110				

Sample ID **N015741-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	820.295	10	250.0	577.8	97.0	90	110				

Sample ID **N015742-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.030	1.0	5.000	0	101	90	110				

Sample ID **N015742-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.192	0.20	1.000	0.1650	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: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100636** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **PBW** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012956**

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-R100636** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **LCSW** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.998	0.20	5.000	0	100	90	110				

Sample ID **N015741-002A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.502	1.0						0.4500	0	20	

Sample ID **N015741-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.993	1.0	5.000	0.4500	90.9	90	110				

Sample ID **N015741-002A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.426	1.0	5.000	0.4500	99.5	90	110	4.993	8.31	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: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015742-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.275	0.20	1.000	0.1870	109	90	110				

Sample ID **N015742-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.055	5.0	25.00	2.022	104	90	110				

Sample ID **N015867-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.749	0.20	1.000	1.775	97.4	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		

CLIENT: CH2M HILL
Work Order: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R100606** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **LCSW** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	98.426	10	100.0	0	98.4	85	115				

Sample ID **MB-R100606** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **PBW** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011630**

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

Sample ID **N015830-003ADUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2451.555	50						2455	0.144	20	

Sample ID **N015742-013AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4850.990	100	2500	2398	98.1	85	115				

Sample ID **N015742-009AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	25091.600	500	12500	12420	101	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: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **N015742-009AMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	25229.650	500	12500	12420	102	85	115	25090	0.549	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: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-50494	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/21/2015	RunNo:	100609
Client ID:	PBW	Batch ID:	50494	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/29/2015	SeqNo:	2012010

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

Sample ID	LCS-50494	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/21/2015	RunNo:	100609
Client ID:	LCSW	Batch ID:	50494	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/29/2015	SeqNo:	2012011

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.284	1.0	10.00	0	103	85	115				

Sample ID	N015741-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/21/2015	RunNo:	100609
Client ID:	ZZZZZZ	Batch ID:	50494	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/29/2015	SeqNo:	2012081

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	114.107	1.0	10.00	107.4	67.0	75	125				S

Sample ID	N015741-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/21/2015	RunNo:	100609
Client ID:	ZZZZZZ	Batch ID:	50494	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/29/2015	SeqNo:	2012085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	113.679	1.0	10.00	107.4	62.7	75	125	114.1	0.376	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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-203
Lab Order:	N015741	**Collection Date:**	5/12/2015 2:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	5/28/2015

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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-203SMT
Lab Order:	N015741	**Collection Date:**	5/12/2015 1:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.88	0.11	0.25		mg/L	5	5/28/2015

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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-127-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	4.4	0.11	0.25		mg/L	5	6/1/2015

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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 10:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	1.4	0.11	0.25		mg/L	5	5/28/2015

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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 9:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	4.2	0.11	0.25		mg/L	5	5/28/2015

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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 1:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	30	1.1	2.5		mg/L	50	5/28/2015

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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-203
Lab Order:	N015741	**Collection Date:**	5/14/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	17	0.44	1.0		mg/L	20	6/1/2015

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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-203
Lab Order:	N015741	**Collection Date:**	5/14/2015 9:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	6.5	0.11	0.25		mg/L	5	5/28/2015

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: *05-Jun-15*

CLIENT: CH2M HILL
Work Order: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100639** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **PBW** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013270**

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-R100639** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **LCSW** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.907	0.050	1.000	0	90.7	85	115				

Sample ID **N015741-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **ZZZZZZ** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.776	0.25						2.902	4.46	20	

Sample ID **N015741-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **ZZZZZZ** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.705	0.25	5.000	2.902	96.0	75	125				

Sample ID **N015741-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **ZZZZZZ** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.895	0.25	5.000	2.902	99.8	75	125	7.705	2.44	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		

CLIENT: CH2M HILL
Work Order: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100640** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **PBW** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013298**

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-R100640** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **LCSW** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.934	0.050	1.000	0	93.4	85	115				

Sample ID **N015742-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.151	0.050						0.1654	9.30	20	

Sample ID **N015742-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.173	0.050	1.000	0.1654	101	75	125				

Sample ID **N015742-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.267	0.050	1.000	0.1654	110	75	125	1.173	7.67	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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-203
Lab Order:	N015741	**Collection Date:**	5/12/2015 2:42:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	4.3	0.079	0.50		µg/L	5	5/29/2015 11:21 AM
Manganese	ND	0.023	0.50		µg/L	1	5/29/2015 11:15 AM
Molybdenum	53	0.15	2.5		µg/L	5	5/29/2015 11:21 AM
Selenium	ND	0.35	2.5		µg/L	5	5/29/2015 11:21 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-40D-203SMT
Lab Order:	N015741	**Collection Date:**	5/12/2015 1:55:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	17	0.016	0.10		µg/L	1	5/29/2015 12:16 PM
Manganese	1500	0.57	12		µg/L	25	6/4/2015 06:11 PM
Molybdenum	64	0.15	2.5		µg/L	5	5/29/2015 12:21 PM
Selenium	ND	0.35	2.5		µg/L	5	5/29/2015 12:21 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-127-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	1.5	0.016	0.10		µg/L	1	5/29/2015 12:27 PM
Manganese	ND	0.023	0.50		µg/L	1	5/29/2015 12:27 PM
Molybdenum	14	0.029	0.50		µg/L	1	5/29/2015 12:27 PM
Selenium	3.5	0.070	0.50		µg/L	1	5/29/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-31-060-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 3:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	1.1	0.016	0.10		µg/L	1	5/29/2015 12:38 PM
Manganese	ND	0.023	0.50		µg/L	1	5/29/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 10:54:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	3.3	0.016	0.10		µg/L	1	5/29/2015 12:49 PM
Manganese	78	0.023	0.50		µg/L	1	5/29/2015 12:49 PM
Molybdenum	25	0.15	2.5		µg/L	5	5/29/2015 12:55 PM
Selenium	ND	0.35	2.5		µg/L	5	5/29/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 9:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	1.4	0.016	0.10		µg/L	1	5/29/2015 01:00 PM
Manganese	ND	0.023	0.50		µg/L	1	5/29/2015 01:00 PM
Molybdenum	13	0.029	0.50		µg/L	1	5/29/2015 01:00 PM
Selenium	3.1	0.070	0.50		µg/L	1	5/29/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-165-203
Lab Order:	N015741	**Collection Date:**	5/13/2015 1:22:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	1.2	0.016	0.10		µg/L	1	5/29/2015 04:40 PM
Manganese	ND	0.023	0.50		µg/L	1	5/29/2015 04:40 PM
Molybdenum	4.7	0.029	0.50		µg/L	1	5/29/2015 04:40 PM
Selenium	31	0.070	0.50		µg/L	1	5/29/2015 04:40 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-129-203
Lab Order:	N015741	**Collection Date:**	5/14/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	2.3	0.016	0.10		µg/L	1	5/29/2015 05:02 PM
Manganese	ND	0.023	0.50		µg/L	1	5/29/2015 05:02 PM
Molybdenum	86	0.029	0.50		µg/L	1	5/29/2015 05:02 PM
Selenium	9.9	0.070	0.50		µg/L	1	5/29/2015 05:02 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: *05-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-203
Lab Order:	N015741	**Collection Date:**	5/14/2015 9:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015741-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150529B**	QC Batch: **50494**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	1.3	0.016	0.10		µg/L	1	5/29/2015 05:24 PM
Manganese	ND	0.023	0.50		µg/L	1	5/29/2015 05:24 PM
Molybdenum	18	0.15	2.5		µg/L	5	5/29/2015 05:29 PM
Selenium	5.1	0.070	0.50		µg/L	1	5/29/2015 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

Date: *05-Jun-15*

CLIENT: CH2M HILL
Work Order: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50494** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100609**
Client ID: **PBW** Batch ID: **50494** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/29/2015** SeqNo: **2012179**

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-50494** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100609**
Client ID: **LCSW** Batch ID: **50494** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/29/2015** SeqNo: **2012180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.979	0.10	10.00	0	99.8	85	115				
Manganese	101.406	0.50	100.0	0	101	85	115				
Molybdenum	9.751	0.50	10.00	0	97.5	85	115				
Selenium	9.210	0.50	10.00	0	92.1	85	115				

Sample ID **N015741-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100609**
Client ID: **ZZZZZZ** Batch ID: **50494** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/29/2015** SeqNo: **2012250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	8.132	0.50	100.0	0	8.13	75	125				S

Sample ID **N015741-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100609**
Client ID: **ZZZZZZ** Batch ID: **50494** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/29/2015** SeqNo: **2012251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.316	0.50	10.00	4.321	110	75	125				
Molybdenum	61.486	2.5	10.00	53.36	81.3	75	125				
Selenium	10.714	2.5	10.00	1.556	91.6	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: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015741-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/21/2015	RunNo:	100609
Client ID:	ZZZZZZ	Batch ID:	50494	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/29/2015	SeqNo:	2012254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	8.436	0.50	100.0	0	8.44	75	125	8.132	3.67	20	S

Sample ID	N015741-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/21/2015	RunNo:	100609
Client ID:	ZZZZZZ	Batch ID:	50494	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/29/2015	SeqNo:	2012255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.342	0.50	10.00	4.321	110	75	125	15.32	0.175	20	
Molybdenum	61.155	2.5	10.00	53.36	78.0	75	125	61.49	0.539	20	
Selenium	11.314	2.5	10.00	1.556	97.6	75	125	10.71	5.45	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

5/19/2015 3:10:56 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/19/2015
COC Number: 8

			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	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-40D-203	5/12/2015	14:42	Water	X		X	X	X	X	N015741-1	3	
MW-40D-203SMT	5/12/2015	13:55	Water	X		X	X	X	X	-2	3	
MW-127-203	5/13/2015	7:00	Water	X		X	X	X	X	-3	3	
MW-216-203	5/13/2015	7:18	Water	X						-4	1	
MW-217-203	5/13/2015	7:15	Water	X						-5	1	
MW-31-060-203	5/13/2015	15:06	Water		X	X	X			-6	2	
MW-61-110-203	5/13/2015	10:54	Water		X	X	X	X	X	-7	3	
MW-62-065-203	5/13/2015	9:52	Water	X		X	X	X	X	-8	3	
MW-66-165-203	5/13/2015	13:22	Water		X	X	X	X	X	-9	3	
MW-129-203	5/14/2015	7:00	Water		X	X	X	X	X	-10	3	
MW-19-203	5/14/2015	12:28	Water		X		X			-11	2	
MW-218-203	5/14/2015	6:15	Water	X						-12	1	
MW-60-125-203	5/14/2015	9:46	Water		X	X	X	X	X	-13	3	

	Signatures	Date/Time
Approved by		5-19-15
Sampled by		1550
Relinquished by		
Received by		5/19/15 1550
Relinquished by		5/19/15 1750
Received by		5/19/15 1750

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 2.9°C, 2.6°C
Airbill No: IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 7 - May 14, 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:	5/19/2015	Workorder:	N015741
Rep sample Temp (Deg C):	2.9/2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 5/21/2015

Reviewed By: 05/26/15

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:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

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

For Sample **N015741-003A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 11.55630 * 50$$

$$Cr^{+6}, \mu g/L = 577.81500$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 580}$$

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 **N015741-006A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 481.305 * 1

= 481.305 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 480

6/2/2015

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 **N015741-001C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5805 * 5

= 2.9025 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 2.9 mg/L

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 **N015741-002B,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 16.5476252850602 * 1 * (25/25)

= 16.5476252850602

Reporting results in two significant figures,

Arsenic, ug/L = 17

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015741
Test Method: EPA 6020
Analysis Date: 5/29/2015

Matrix: Water
Batch No.: 50494

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo and Se. The calculated concentrations are < 25X RL's.
Dilution test failed for Cr.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015741-001B-DT 25X	Arsenic	µg/L	4.720406478	NA	4.320876605	9.25%	10
N015741-001B-DT 5X	Chromium	µg/L	119.6787318	FAIL	107.4084423	11.42%	10
N015741-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N015741-001B-DT 25X	Molybdenum	µg/L	55.45903231	NA	53.35761185	3.94%	10
N015741-001B-DT 25X	Selenium	µg/L	0	NA	1.556052305	100.00%	10

Note: NA - Not applicable

Mary 6/5/2015
for

ASSET Laboratories

Date: *05-Jun-15*

CLIENT: CH2M HILL
Work Order: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N015741-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**100609**
Client ID:	**ZZZZZZ**	Batch ID:	**50494**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**5/29/2015**	SeqNo:	**2012256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	7.050	0.50	100.0	0	7.05	80	120				S

Sample ID	**N015741-001B-PS**	SampType:	**PS**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**100609**
Client ID:	**ZZZZZZ**	Batch ID:	**50494**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**5/29/2015**	SeqNo:	**2012257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.980	0.50	10.00	4.321	107	80	120				
Molybdenum	59.218	2.5	10.00	53.36	58.6	80	120				S
Selenium	11.021	2.5	10.00	1.556	94.7	80	120				

DT of Mo @25x is within criteria.

Tony 6/5/2015

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		

CLIENT: CH2M HILL
Work Order: N015741
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N015741-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **100609**
Client ID: **ZZZZZZ** Batch ID: **50494** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/29/2015** SeqNo: **2012087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	113.789	1.0	10.00	107.4	63.8	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		

June 04, 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.: N015742

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 19, 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:** *04-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015742

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 218.6:

Because the results for total dissolved chromium (1.169 ug/L) and hexavalent chromium (0.1651ug/L) for sample N015742-003 (MW-74-240-203) are discrepant, Matrix Spike protocol was performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (0 ug/L) for sample N015742-007(MW-64BR-203) are discrepant, Matrix Spike protocol was performed and the spike recovery is within criteria.

Dilution was necessary for samples N015742-001 (MW-60BR-245-203) and N015742-007 (MW-64BR-203) due to matrix interference. Samples were analyzed at lower dilution however Matrix Spike was not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.169 ug/L) and hexavalent chromium (0.1651 ug/L) for sample N015742-003 (MW-74-240-203) 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 1.139 and 1.510 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (0 ug/L) for sample N015742-007 (MW-64BR-203) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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"

results from the redigested samples were 9.856 and 15.398 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 N015742-001, N015742-007 and N015742-016 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) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese on QC samples N015742-001B-MS and N015742-001B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Chromium on QC sample N015742-013B-MS 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
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

Date: *04-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015742
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015742-001A	MW-60BR-245-203	Water	5/14/2015 8:40:00 AM	5/19/2015	6/4/2015
N015742-001B	MW-60BR-245-203	Water	5/14/2015 8:40:00 AM	5/19/2015	6/4/2015
N015742-001C	MW-60BR-245-203	Water	5/14/2015 8:40:00 AM	5/19/2015	6/4/2015
N015742-002A	MW-69-195-203	Water	5/14/2015 7:42:00 AM	5/19/2015	6/4/2015
N015742-002B	MW-69-195-203	Water	5/14/2015 7:42:00 AM	5/19/2015	6/4/2015
N015742-002C	MW-69-195-203	Water	5/14/2015 7:42:00 AM	5/19/2015	6/4/2015
N015742-003A	MW-74-240-203	Water	5/14/2015 7:00:00 AM	5/19/2015	6/4/2015
N015742-003B	MW-74-240-203	Water	5/14/2015 7:00:00 AM	5/19/2015	6/4/2015
N015742-003C	MW-74-240-203	Water	5/14/2015 7:00:00 AM	5/19/2015	6/4/2015
N015742-004A	MW-219-203	Water	5/15/2015 2:33:00 PM	5/19/2015	6/4/2015
N015742-005A	MW-220-203	Water	5/15/2015 2:31:00 PM	5/19/2015	6/4/2015
N015742-006A	MW-58BR-203	Water	5/18/2015 9:20:00 AM	5/19/2015	6/4/2015
N015742-006B	MW-58BR-203	Water	5/18/2015 9:20:00 AM	5/19/2015	6/4/2015
N015742-006C	MW-58BR-203	Water	5/18/2015 9:20:00 AM	5/19/2015	6/4/2015
N015742-007A	MW-64BR-203	Water	5/18/2015 11:40:00 AM	5/19/2015	6/4/2015
N015742-007B	MW-64BR-203	Water	5/18/2015 11:40:00 AM	5/19/2015	6/4/2015
N015742-007C	MW-64BR-203	Water	5/18/2015 11:40:00 AM	5/19/2015	6/4/2015
N015742-008A	MW-66BR-270-203	Water	5/18/2015 1:20:00 PM	5/19/2015	6/4/2015
N015742-008B	MW-66BR-270-203	Water	5/18/2015 1:20:00 PM	5/19/2015	6/4/2015
N015742-008C	MW-66BR-270-203	Water	5/18/2015 1:20:00 PM	5/19/2015	6/4/2015
N015742-009A	MW-68-180-203	Water	5/18/2015 1:06:00 PM	5/19/2015	6/4/2015
N015742-009B	MW-68-180-203	Water	5/18/2015 1:06:00 PM	5/19/2015	6/4/2015
N015742-009C	MW-68-180-203	Water	5/18/2015 1:06:00 PM	5/19/2015	6/4/2015
N015742-010A	MW-121-203	Water	5/19/2015 7:00:00 AM	5/19/2015	6/4/2015
N015742-010B	MW-121-203	Water	5/19/2015 7:00:00 AM	5/19/2015	6/4/2015
N015742-010C	MW-121-203	Water	5/19/2015 7:00:00 AM	5/19/2015	6/4/2015
N015742-011A	MW-12-203	Water	5/19/2015 11:38:00 AM	5/19/2015	6/4/2015
N015742-011B	MW-12-203	Water	5/19/2015 11:38:00 AM	5/19/2015	6/4/2015
N015742-011C	MW-12-203	Water	5/19/2015 11:38:00 AM	5/19/2015	6/4/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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
Project: PG&E Topock
Lab Order: N015742
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015742-012A	MW-20-070-203	Water	5/19/2015 8:52:00 AM	5/19/2015	6/4/2015
N015742-012B	MW-20-070-203	Water	5/19/2015 8:52:00 AM	5/19/2015	6/4/2015
N015742-012C	MW-20-070-203	Water	5/19/2015 8:52:00 AM	5/19/2015	6/4/2015
N015742-013A	MW-20-100-203	Water	5/19/2015 9:14:00 AM	5/19/2015	6/4/2015
N015742-013B	MW-20-100-203	Water	5/19/2015 9:14:00 AM	5/19/2015	6/4/2015
N015742-013C	MW-20-100-203	Water	5/19/2015 9:14:00 AM	5/19/2015	6/4/2015
N015742-014A	MW-20-130-203	Water	5/19/2015 9:46:00 AM	5/19/2015	6/4/2015
N015742-014B	MW-20-130-203	Water	5/19/2015 9:46:00 AM	5/19/2015	6/4/2015
N015742-014C	MW-20-130-203	Water	5/19/2015 9:46:00 AM	5/19/2015	6/4/2015
N015742-015A	MW-62-110-203	Water	5/19/2015 1:50:00 PM	5/19/2015	6/4/2015
N015742-015B	MW-62-110-203	Water	5/19/2015 1:50:00 PM	5/19/2015	6/4/2015
N015742-015C	MW-62-110-203	Water	5/19/2015 1:50:00 PM	5/19/2015	6/4/2015
N015742-016A	MW-62-190-203	Water	5/19/2015 1:59:00 PM	5/19/2015	6/4/2015
N015742-016B	MW-62-190-203	Water	5/19/2015 1:59:00 PM	5/19/2015	6/4/2015
N015742-016C	MW-62-190-203	Water	5/19/2015 1:59:00 PM	5/19/2015	6/4/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 8:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150528A**	QC Batch: **R100566**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	5/28/2015 06:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/28/2015 02:34 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 7:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	970	2.8	20		µg/L	2	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	1100	2.1	25		µg/L	25	5/28/2015 06:31 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150528A**	QC Batch: **R100566**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/28/2015 04:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	1.2	0.086	1.0		µg/L	1	5/28/2015 03:46 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-219-203
Lab Order:	N015742	**Collection Date:**	5/15/2015 2:33:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150528A**	QC Batch: **R100566**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/28/2015 04:48 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-220-203
Lab Order:	N015742	**Collection Date:**	5/15/2015 2:31:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150528A**	QC Batch: **R100566**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	5/28/2015 07:07 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

ANALYTICAL RESULTS

Print Date: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150601A**	QC Batch: **R100635**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/1/2015 08:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/28/2015 03:57 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

ANALYTICAL RESULTS

Print Date: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150602A**	QC Batch: **R100636**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.38	5.0		µg/L	25	6/2/2015 10:42 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	11	0.086	1.0		µg/L	1	5/28/2015 04:08 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66BR-270-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150602A**	QC Batch: **R100636**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/2/2015 10:12 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/28/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 1:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	12000	69	500		µg/L	50	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	13000	8.6	100		µg/L	100	5/28/2015 07:10 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	1900	6.9	50		µg/L	5	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	2200	2.1	25		µg/L	25	5/28/2015 07:15 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 11:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	1900	6.9	50		µg/L	5	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	2200	2.1	25		µg/L	25	5/28/2015 07:21 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	1900	6.9	50		µg/L	5	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	2200	2.1	25		µg/L	25	5/28/2015 07:26 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	2400	14	100		µg/L	10	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	2800	2.1	25		µg/L	25	5/28/2015 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 9:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	7600	28	200		µg/L	20	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	7900	4.3	50		µg/L	50	5/28/2015 07:43 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 1:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150601A** QC Batch: **R100635**				PrepDate			Analyst: **RB**
Hexavalent Chromium	1000	3.0	40		µg/L	200	6/1/2015 09:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A				**EPA 6020**			
RunID: **ICP7_150528B** QC Batch: **50496**				PrepDate	**5/21/2015**		Analyst: **CEI**
Chromium	1100	0.86	10		µg/L	10	5/28/2015 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 1:59:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150601A** QC Batch: **R100635**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/1/2015 10:55 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150528B** QC Batch: **50496**				PrepDate		**5/21/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	5/28/2015 06:20 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

Date: *04-Jun-15*

CLIENT: CH2M HILL
Work Order: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100566** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **PBW** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009780**

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-R100566** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **LCSW** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.001	0.20	5.000	0	100	90	110				

Sample ID **N015741-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009784**

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	0.09480	105	90	110				

Sample ID **N015741-012A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.133	0.20	1.000	0.1096	102	90	110				

Sample ID **N015741-001A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	118.326	4.0						117.5	0.682	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015741-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	214.316	4.0	100.0	117.5	96.8	90	110				

Sample ID **N015741-001A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	216.754	4.0	100.0	117.5	99.2	90	110	214.3	1.13	20	

Sample ID **N015741-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009794**

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	0.1182	102	90	110				

Sample ID **N015741-008A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	837.665	10	250.0	580.5	103	90	110				

Sample ID **N015742-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009801**

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	0.1651	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015742-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.186	0.20	1.000	0.1592	103	90	110				

Sample ID **N015741-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	820.295	10	250.0	577.8	97.0	90	110				

Sample ID **N015742-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.030	1.0	5.000	0	101	90	110				

Sample ID **N015742-005A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100566**
Client ID: **ZZZZZZ** Batch ID: **R100566** TestNo: **EPA 218.6** Analysis Date: **5/28/2015** SeqNo: **2009813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.192	0.20	1.000	0.1650	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100635** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100635**
Client ID: **PBW** Batch ID: **R100635** TestNo: **EPA 218.6** Analysis Date: **6/1/2015** SeqNo: **2012870**

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-R100635** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100635**
Client ID: **LCSW** Batch ID: **R100635** TestNo: **EPA 218.6** Analysis Date: **6/1/2015** SeqNo: **2012871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.968	0.20	5.000	0	99.4	90	110				

Sample ID **N015829-004A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100635**
Client ID: **ZZZZZZ** Batch ID: **R100635** TestNo: **EPA 218.6** Analysis Date: **6/1/2015** SeqNo: **2012873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0.05840	0	20	

Sample ID **N015829-004A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100635**
Client ID: **ZZZZZZ** Batch ID: **R100635** TestNo: **EPA 218.6** Analysis Date: **6/1/2015** SeqNo: **2012874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.019	0.20	1.000	0.05840	96.1	90	110				

Sample ID **N015829-004A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100635**
Client ID: **ZZZZZZ** Batch ID: **R100635** TestNo: **EPA 218.6** Analysis Date: **6/1/2015** SeqNo: **2012879**

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	0.05840	96.2	90	110	1.019	0.137	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015742-006A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100635**
Client ID: **ZZZZZZ** Batch ID: **R100635** TestNo: **EPA 218.6** Analysis Date: **6/1/2015** SeqNo: **2012896**

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	109	90	110				

Sample ID **N015742-015A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100635**
Client ID: **ZZZZZZ** Batch ID: **R100635** TestNo: **EPA 218.6** Analysis Date: **6/1/2015** SeqNo: **2012898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2040.440	40	1000	1036	100	90	110				

Sample ID **N015742-016A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100635**
Client ID: **ZZZZZZ** Batch ID: **R100635** TestNo: **EPA 218.6** Analysis Date: **6/1/2015** SeqNo: **2012902**

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	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100636** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **PBW** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012956**

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-R100636** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **LCSW** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.998	0.20	5.000	0	100	90	110				

Sample ID **N015741-002A-DUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.502	1.0						0.4500	0	20	

Sample ID **N015741-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.993	1.0	5.000	0.4500	90.9	90	110				

Sample ID **N015741-002A-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.426	1.0	5.000	0.4500	99.5	90	110	4.993	8.31	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015742-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.275	0.20	1.000	0.1870	109	90	110				

Sample ID **N015742-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.055	5.0	25.00	2.022	104	90	110				

Sample ID **N015867-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100636**
Client ID: **ZZZZZZ** Batch ID: **R100636** TestNo: **EPA 218.6** Analysis Date: **6/2/2015** SeqNo: **2012969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.749	0.20	1.000	1.775	97.4	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		

CLIENT: CH2M HILL
Work Order: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R100606** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **LCSW** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	98.426	10	100.0	0	98.4	85	115				

Sample ID **MB-R100606** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **PBW** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011630**

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

Sample ID **N015830-003ADUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2451.555	50						2455	0.144	20	

Sample ID **N015742-013AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4850.990	100	2500	2398	98.1	85	115				

Sample ID **N015742-009AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	25091.600	500	12500	12420	101	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **N015742-009AMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	25229.650	500	12500	12420	102	85	115	25090	0.549	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-50496** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **PBW** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010840**

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

Sample ID **LCS-50496** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **LCSW** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.295	1.0	10.00	0	103	85	115				

Sample ID **N015742-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.661	1.0	10.00	0.8859	87.8	75	125				

Sample ID **N015742-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.551	1.0	10.00	0.8859	86.7	75	125	9.661	1.15	20	

Sample ID **N015742-013B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2940.713	25	10.00	2809	1320	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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 8:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.17	0.022	0.050		mg/L	1	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 7:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	18	0.44	1.0		mg/L	20	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	1.8	0.022	0.050		mg/L	1	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.21	0.022	0.050		mg/L	1	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150601I**	QC Batch: **R100640**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66BR-270-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 1:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	16	0.44	1.0		mg/L	20	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	7.6	0.11	0.25		mg/L	5	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 11:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	15	0.22	0.50		mg/L	10	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	7.9	0.22	0.50		mg/L	10	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	9.6	0.22	0.50		mg/L	10	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 9:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	14	0.22	0.50		mg/L	10	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 1:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.7	0.11	0.25		mg/L	5	6/1/2015

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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 1:59:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150601I**	QC Batch: **R100640**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	6/1/2015

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: *04-Jun-15*

CLIENT: CH2M HILL
Work Order: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100640** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **PBW** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013298**

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-R100640** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **LCSW** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.934	0.050	1.000	0	93.4	85	115				

Sample ID **N015742-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.151	0.050						0.1654	9.30	20	

Sample ID **N015742-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.173	0.050	1.000	0.1654	101	75	125				

Sample ID **N015742-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.267	0.050	1.000	0.1654	110	75	125	1.173	7.67	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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60BR-245-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 8:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**				PrepDate	**5/21/2015**	Analyst: **CEI**
Arsenic	6.7	0.016	0.10		µg/L	1	5/28/2015 02:34 PM
Manganese	ND	0.023	0.50		µg/L	1	5/28/2015 02:34 PM
Molybdenum	63	0.15	2.5		µg/L	5	5/28/2015 02:40 PM
Selenium	1.1	0.070	0.50		µg/L	1	5/28/2015 02:34 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-69-195-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 7:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	2.3	0.016	0.10		µg/L	1	5/28/2015 03:35 PM
Manganese	ND	0.023	0.50		µg/L	1	5/28/2015 03:35 PM
Molybdenum	85	0.029	0.50		µg/L	1	5/28/2015 03:35 PM
Selenium	10	0.070	0.50		µg/L	1	5/28/2015 03:35 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-74-240-203
Lab Order:	N015742	**Collection Date:**	5/14/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	9.9	0.016	0.10		µg/L	1	5/28/2015 03:46 PM
Manganese	9.9	0.023	0.50		µg/L	1	5/28/2015 03:46 PM
Molybdenum	41	0.029	0.50		µg/L	1	5/28/2015 03:46 PM
Selenium	1.7	0.070	0.50		µg/L	1	5/28/2015 03:46 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-58BR-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 9:20:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	1.2	0.016	0.10		µg/L	1	5/28/2015 03:57 PM
Manganese	130	0.023	0.50		µg/L	1	5/28/2015 03:57 PM
Molybdenum	26	0.029	0.50		µg/L	1	5/28/2015 03:57 PM
Selenium	1.3	0.070	0.50		µg/L	1	5/28/2015 03:57 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

ANALYTICAL RESULTS

Print Date: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-64BR-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 11:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**				PrepDate	**5/21/2015**	Analyst: **CEI**
Arsenic	6.0	0.016	0.10		µg/L	1	5/28/2015 04:08 PM
Manganese	1400	0.57	12		µg/L	25	5/28/2015 07:04 PM
Molybdenum	70	0.15	2.5		µg/L	5	5/28/2015 04:13 PM
Selenium	ND	0.35	2.5		µg/L	5	5/28/2015 04:13 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66BR-270-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 1:20:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	ND	0.016	0.10		µg/L	1	5/28/2015 04:19 PM
Manganese	ND	0.023	0.50		µg/L	1	5/28/2015 04:19 PM
Molybdenum	2.1	0.029	0.50		µg/L	1	5/28/2015 04:19 PM
Selenium	ND	0.070	0.50		µg/L	1	5/28/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-180-203
Lab Order:	N015742	**Collection Date:**	5/18/2015 1:06:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	2.8	0.016	0.10		µg/L	1	5/28/2015 04:41 PM
Manganese	ND	0.023	0.50		µg/L	1	5/28/2015 04:41 PM
Molybdenum	34	0.029	0.50		µg/L	1	5/28/2015 04:41 PM
Selenium	11	0.070	0.50		µg/L	1	5/28/2015 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-121-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 7:00:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Molybdenum	42	0.029	0.50		µg/L	1	5/28/2015 04:52 PM
Selenium	4.9	0.070	0.50		µg/L	1	5/28/2015 04:52 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

ANALYTICAL RESULTS

Print Date: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 11:38:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**				PrepDate	**5/21/2015**	Analyst: **CEI**
Molybdenum	12	0.029	0.50		µg/L	1	5/28/2015 05:03 PM
Selenium	20	0.070	0.50		µg/L	1	5/28/2015 05:03 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-070-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 8:52:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**				PrepDate	**5/21/2015**	Analyst: **CEI**
Molybdenum	41	0.029	0.50		µg/L	1	5/28/2015 05:14 PM
Selenium	4.6	0.070	0.50		µg/L	1	5/28/2015 05:14 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-100-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 9:14:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**				PrepDate	**5/21/2015**	Analyst: **CEI**
Molybdenum	3.7	0.029	0.50		µg/L	1	5/28/2015 05:25 PM
Selenium	5.3	0.070	0.50		µg/L	1	5/28/2015 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-20-130-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 9:46:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	4.8	0.016	0.10		µg/L	1	5/28/2015 05:58 PM
Manganese	ND	0.023	0.50		µg/L	1	5/28/2015 05:58 PM
Molybdenum	35	0.029	0.50		µg/L	1	5/28/2015 05:58 PM
Selenium	29	0.070	0.50		µg/L	1	5/28/2015 05:58 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 1:50:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**			PrepDate	**5/21/2015**		Analyst: **CEI**
Arsenic	7.4	0.016	0.10		µg/L	1	5/28/2015 06:09 PM
Manganese	53	0.023	0.50		µg/L	1	5/28/2015 06:09 PM
Molybdenum	39	0.029	0.50		µg/L	1	5/28/2015 06:09 PM
Selenium	2.5	0.070	0.50		µg/L	1	5/28/2015 06:09 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: *04-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-203
Lab Order:	N015742	**Collection Date:**	5/19/2015 1:59:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015742-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150528B**	QC Batch: **50496**				PrepDate	**5/21/2015**	Analyst: **CEI**
Arsenic	3.8	0.016	0.10		µg/L	1	5/28/2015 06:20 PM
Manganese	490	0.11	2.5		µg/L	5	5/28/2015 06:26 PM
Molybdenum	68	0.15	2.5		µg/L	5	5/28/2015 06:26 PM
Selenium	ND	0.35	2.5		µg/L	5	5/28/2015 06:26 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		

CLIENT: CH2M HILL
Work Order: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50496** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **PBW** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010939**

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	0.128	0.50									
Selenium	ND	0.50									

Sample ID **LCS-50496** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **LCSW** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.196	0.10	10.00	0	102	85	115				
Manganese	99.298	0.50	100.0	0	99.3	85	115				
Molybdenum	9.223	0.50	10.00	0	92.2	85	115				
Selenium	9.805	0.50	10.00	0	98.0	85	115				

Sample ID **N015742-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.901	0.10	10.00	6.684	92.2	75	125				
Manganese	13.355	0.50	100.0	0	13.4	75	125				S
Selenium	8.786	0.50	10.00	1.081	77.0	75	125				

Sample ID **N015742-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	74.495	2.5	10.00	63.01	115	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: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015742-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.791	0.10	10.00	6.684	91.1	75	125	15.90	0.692	20	
Manganese	12.016	0.50	100.0	0	12.0	75	125	13.35	10.6	20	S
Selenium	8.637	0.50	10.00	1.081	75.6	75	125	8.786	1.71	20	

Sample ID **N015742-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	71.327	2.5	10.00	63.01	83.1	75	125	74.50	4.35	20	

Sample ID **N015742-013B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/21/2015** RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.019	0.10	10.00	1.879	101	75	125				
Manganese	81.903	0.50	100.0	0	81.9	75	125				
Molybdenum	13.649	0.50	10.00	3.664	99.8	75	125				
Selenium	14.585	0.50	10.00	5.305	92.8	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		

CH2MHILL

CHAIN OF CUSTODY RECORD

5/19/2015 3:10:57 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/19/2015
COC Number: 8

			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	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-60BR-245-203	5/14/2015	8:40	Water	X		X	X	X	X	N015742-1	3	
MW-69-195-203	5/14/2015	7:42	Water		X	X	X	X	X	-2	3	
MW-74-240-203	5/14/2015	7:00	Water	X		X	X	X	X	-3	3	
MW-219-203	5/15/2015	14:33	Water	X						-4	1	
MW-220-203	5/15/2015	14:31	Water	X						-5	1	
MW-58BR-203	5/18/2015	9:20	Water	X		X	X	X	X	-6	3	
MW-64BR-203	5/18/2015	11:40	Water	X		X	X	X	X	-7	3	
MW-66BR-270-203	5/18/2015	13:20	Water	X		X	X	X	X	-8	3	
MW-68-180-203	5/18/2015	13:06	Water		X	X	X	X	X	-9	3	
MW-121-203	5/19/2015	7:00	Water		X		X	X	X	-10	3	
MW-12-203	5/19/2015	11:38	Water		X		X	X	X	-11	3	
MW-20-070-203	5/19/2015	8:52	Water		X		X	X	X	-12	3	
MW-20-100-203	5/19/2015	9:14	Water		X		X	X	X	-13	3	
MW-20-130-203	5/19/2015	9:46	Water		X	X	X	X	X	-14	3	

	Signatures	Date/Time
Approved by		5-19-15 1550
Sampled by		
Relinquished by		
Received by		5/19/15 1550
Relinquished by		5/19/15 1750
Received by		5/19/15 1750

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 2.9°C, 2.6°C
Airbill No: IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 7 - May 14, 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

5/19/2015 3:10:57 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/19/2015
COC Number: 8

			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	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-62-110-203	5/19/2015	13:50	Water	X		X	X	X	X	N015742 -15	3	
MW-62-190-203	5/19/2015	13:59	Water	X		X	X	X	X	I -16	3	
										TOTAL NUMBER OF CONTAINERS	75	

	Signatures	Date/Time
Approved by		5-19-15 1550
Sampled by		
Relinquished by		
Received by		5/19/15 1552
Relinquished by		5/19/15 1750
Received by		5/19/15 1750

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 2-gal IR #2
Airbill No:
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 7 - May 14, 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:	5/19/2015	Workorder:	N015742
Rep sample Temp (Deg C):	2.9/2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 5/21/2015

Reviewed By: gsg 05/26/15

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:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

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

For Sample **N015742-015A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 5.1789 * 200$$

$$Cr^{+6}, \mu g/L = 1036$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 1000}$$

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 **N015742-013A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 239.796 * 10

= 2397.96 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 2400

6/2/2015

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 **N015742-002C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.8783 * 20

= 17.566 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 18 mg/L

REB 6/3/2015

Sample Calculation

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

FORMULA:

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

Chromium ,µg/L = A * DF * PF

where:

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

For Sample **N015742-002B** , the concentration in µg/L is calculated as follows:

Chromium ,µg/L = 43.67848617 * 25 * (25 / 25)

Chromium ,µg/L = 1091.962154

Reporting results in two significant figures,

Chromium ,µg/L = 1100

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N015742
Test Method: EPA 6020
Analysis Date: 5/28/2015

Matrix: Water
Batch No.: 50496

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Se & Mn. The calculated concentrations are <25X RL.
Dilution test failed for As. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015742-001B DT 5X	Chromium	µg/L	0.856	NA	0.886	3.38%	10
N015742-001B DT 5X	Arsenic	µg/L	7.607	FAIL	6.684	13.81%	10
N015742-001B DT 5X	Manganese	µg/L	0.000	NA	0.000		
N015742-001B DT 25X	Molybdenum	µg/L	64.290	PASS	63.014	2.02%	
N015742-001B DT 5X	Selenium	µg/L	0.983	NA	1.081	9.06%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *04-Jun-15*

CLIENT: CH2M HILL
Work Order: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N015742-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.251	0.10	10.00	6.684	95.7	80	120				
Manganese	10.418	0.50	100.0	0	10.4	80	120				S
Selenium	8.717	0.50	10.00	1.081	76.4	80	120				S

Sample ID: **N015742-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	77.457	2.5	10.00	63.01	144	80	120				S

DT of Mo @25x is within criteria.

Nancy 6/4/2015

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		

CLIENT: CH2M HILL
Work Order: N015742
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N015742-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **100591**
Client ID: **ZZZZZZ** Batch ID: **50496** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/28/2015** SeqNo: **2010845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.508	1.0	10.00	0.8859	86.2	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		

June 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.: N015805

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 26, 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:** *10-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015805

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 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N015805-001B-MS, N015805-001B-MSD and N015830-001B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N015805-001B-MS, N015805-001B-MSD 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 samples N015805-002, N015805-009, N015805-013 and N015805-014 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.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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

Date: *10-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015805
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015805-001A	MW-26-203	Water	5/19/2015 12:36:00 PM	5/26/2015	6/10/2015
N015805-001B	MW-26-203	Water	5/19/2015 12:36:00 PM	5/26/2015	6/10/2015
N015805-001C	MW-26-203	Water	5/19/2015 12:36:00 PM	5/26/2015	6/10/2015
N015805-002A	MW-59-100-203	Water	5/19/2015 2:52:00 PM	5/26/2015	6/10/2015
N015805-002B	MW-59-100-203	Water	5/19/2015 2:52:00 PM	5/26/2015	6/10/2015
N015805-002C	MW-59-100-203	Water	5/19/2015 2:52:00 PM	5/26/2015	6/10/2015
N015805-003A	MW-221-203	Water	5/20/2015 6:40:00 AM	5/26/2015	6/10/2015
N015805-004A	MW-222-203	Water	5/20/2015 6:42:00 AM	5/26/2015	6/10/2015
N015805-005A	MW-50-200-203	Water	5/20/2015 8:07:00 AM	5/26/2015	6/10/2015
N015805-005B	MW-50-200-203	Water	5/20/2015 8:07:00 AM	5/26/2015	6/10/2015
N015805-006A	MW-51-203	Water	5/20/2015 2:52:00 PM	5/26/2015	6/10/2015
N015805-006B	MW-51-203	Water	5/20/2015 2:52:00 PM	5/26/2015	6/10/2015
N015805-006C	MW-51-203	Water	5/20/2015 2:52:00 PM	5/26/2015	6/10/2015
N015805-007A	MW-67-185-203	Water	5/20/2015 1:38:00 PM	5/26/2015	6/10/2015
N015805-007B	MW-67-185-203	Water	5/20/2015 1:38:00 PM	5/26/2015	6/10/2015
N015805-007C	MW-67-185-203	Water	5/20/2015 1:38:00 PM	5/26/2015	6/10/2015
N015805-008A	MW-67-225-203	Water	5/20/2015 10:28:00 AM	5/26/2015	6/10/2015
N015805-008B	MW-67-225-203	Water	5/20/2015 10:28:00 AM	5/26/2015	6/10/2015
N015805-008C	MW-67-225-203	Water	5/20/2015 10:28:00 AM	5/26/2015	6/10/2015
N015805-009A	MW-67-260-203	Water	5/20/2015 11:23:00 AM	5/26/2015	6/10/2015
N015805-009B	MW-67-260-203	Water	5/20/2015 11:23:00 AM	5/26/2015	6/10/2015
N015805-009C	MW-67-260-203	Water	5/20/2015 11:23:00 AM	5/26/2015	6/10/2015
N015805-010A	MW-223-203	Water	5/21/2015 7:06:00 AM	5/26/2015	6/10/2015
N015805-011A	MW-224-203	Water	5/21/2015 7:05:00 AM	5/26/2015	6/10/2015
N015805-012A	MW-57-070-203	Water	5/21/2015 1:47:00 PM	5/26/2015	6/10/2015
N015805-012B	MW-57-070-203	Water	5/21/2015 1:47:00 PM	5/26/2015	6/10/2015
N015805-012C	MW-57-070-203	Water	5/21/2015 1:47:00 PM	5/26/2015	6/10/2015
N015805-013A	MW-66-230-203	Water	5/21/2015 8:32:00 AM	5/26/2015	6/10/2015
N015805-013B	MW-66-230-203	Water	5/21/2015 8:32:00 AM	5/26/2015	6/10/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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
Project: PG&E Topock
Lab Order: N015805
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015805-013C	MW-66-230-203	Water	5/21/2015 8:32:00 AM	5/26/2015	6/10/2015
N015805-014A	MW-68-240-203	Water	5/21/2015 10:03:00 AM	5/26/2015	6/10/2015
N015805-014B	MW-68-240-203	Water	5/21/2015 10:03:00 AM	5/26/2015	6/10/2015
N015805-014C	MW-68-240-203	Water	5/21/2015 10:03:00 AM	5/26/2015	6/10/2015
N015805-015A	MW-225-203	Water	5/22/2015 9:32:00 AM	5/26/2015	6/10/2015
N015805-016A	MW-226-203	Water	5/22/2015 9:30:00 AM	5/26/2015	6/10/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-203
Lab Order:	N015805	**Collection Date:**	5/19/2015 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	2400	6.9	50		µg/L	5	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	2500	2.1	25		µg/L	25	6/8/2015 02:52 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

ANALYTICAL RESULTS

Print Date: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-203
Lab Order:	N015805	**Collection Date:**	5/19/2015 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	3900	14	100		µg/L	10	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	4300	2.1	25		µg/L	25	6/9/2015 10:46 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-221-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 6:40:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/4/2015 10:31 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-222-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 6:42:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/4/2015 11:09 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 8:07:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	3800	14	100		µg/L	10	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	4000	2.1	25		µg/L	25	6/9/2015 10:51 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	4600	14	100		µg/L	10	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	5100	4.3	50		µg/L	50	6/9/2015 10:57 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 1:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	1800	6.9	50		µg/L	5	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	2100	2.1	25		µg/L	25	6/9/2015 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 10:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	3200	14	100		µg/L	10	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	3400	2.1	25		µg/L	25	6/9/2015 11:08 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 11:23:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	700	2.8	20		µg/L	2	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	730	0.43	5.0		µg/L	5	6/8/2015 04:53 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-223-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 7:06:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/4/2015 11:28 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-224-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 7:05:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.25	0.015	0.20		µg/L	1	6/4/2015 11:47 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 1:47:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	410	0.75	10		µg/L	50	6/4/2015 09:53 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate	**6/2/2015**		Analyst: **CEI**
Chromium	420	0.43	5.0		µg/L	5	6/8/2015 05:05 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 8:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	6500	14	100		µg/L	10	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	7000	4.3	50		µg/L	50	6/9/2015 11:13 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 10:03:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150602F**	QC Batch: **R100623**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	2200	6.9	50		µg/L	5	6/2/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate	**6/2/2015**		Analyst: **CEI**
Chromium	2500	2.1	25		µg/L	25	6/9/2015 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-225-203
Lab Order:	N015805	**Collection Date:**	5/22/2015 9:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/4/2015 12:06 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-226-203
Lab Order:	N015805	**Collection Date:**	5/22/2015 9:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/4/2015 12:24 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

Date: *10-Jun-15*

CLIENT: CH2M HILL
Work Order: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100680** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **PBW** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016126**

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-R100680** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **LCSW** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.951	0.20	5.000	0	99.0	90	110				

Sample ID **N015805-012ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	409.980	10						407.5	0.606	20	

Sample ID **N015805-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	656.040	10	250.0	407.5	99.4	90	110				

Sample ID **N015805-012AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	657.320	10	250.0	407.5	99.9	90	110	656.0	0.195	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: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015805-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.162	0.20	1.000	0.1763	98.5	90	110				

Sample ID **N015805-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.185	0.20	1.000	0.1383	105	90	110				

Sample ID **N015805-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.219	0.20	1.000	0.1833	104	90	110				

Sample ID **N015805-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.236	0.20	1.000	0.2521	98.4	90	110				

Sample ID **N015805-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.159	0.20	1.000	0.1462	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: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015805-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.183	0.20	1.000	0.1246	106	90	110				

Sample ID **N015830-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.204	0.20	1.000	0.1732	103	90	110				

Sample ID **N015830-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.010	1.0	5.000	0	100	90	110				

Sample ID **N015885-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.427	0.20	1.000	1.382	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: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R100623** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100623**
Client ID: **LCSW** Batch ID: **R100623** TestNo: **SM 3500-Cr B** Analysis Date: **6/2/2015** SeqNo: **2012486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	96.660	10	100.0	0	96.7	85	115				

Sample ID **MB-R100623** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100623**
Client ID: **PBW** Batch ID: **R100623** TestNo: **SM 3500-Cr B** Analysis Date: **6/2/2015** SeqNo: **2012487**

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

Sample ID **N015805-001AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100623**
Client ID: **ZZZZZZ** Batch ID: **R100623** TestNo: **SM 3500-Cr B** Analysis Date: **6/2/2015** SeqNo: **2012495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	3576.790	50	1250	2403	93.9	85	115				

Sample ID **N015805-001AMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100623**
Client ID: **ZZZZZZ** Batch ID: **R100623** TestNo: **SM 3500-Cr B** Analysis Date: **6/2/2015** SeqNo: **2012496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	3619.465	50	1250	2403	97.3	85	115	3577	1.19	20	

Sample ID **N015805-014ADUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100623**
Client ID: **ZZZZZZ** Batch ID: **R100623** TestNo: **SM 3500-Cr B** Analysis Date: **6/2/2015** SeqNo: **2012499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2160.570	50						2167	0.280	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: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-50570	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/2/2015	RunNo:	100706
Client ID:	PBW	Batch ID:	50570	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2015	SeqNo:	2018393

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

Sample ID	LCS-50570	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/2/2015	RunNo:	100706
Client ID:	LCSW	Batch ID:	50570	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2015	SeqNo:	2018394

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.050	1.0	10.00	0	101	85	115				

Sample ID	N015830-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/2/2015	RunNo:	100706
Client ID:	ZZZZZZ	Batch ID:	50570	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2015	SeqNo:	2018430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.934	1.0	10.00	0.5023	94.3	75	125				

Sample ID	N015805-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/2/2015	RunNo:	100707
Client ID:	ZZZZZZ	Batch ID:	50570	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2015	SeqNo:	2018501

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2433.122	25	10.00	2541	-1080	75	125				S

Sample ID	N015805-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/2/2015	RunNo:	100707
Client ID:	ZZZZZZ	Batch ID:	50570	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2015	SeqNo:	2018502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2421.781	25	10.00	2541	-1190	75	125	2433	0.467	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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-203
Lab Order:	N015805	**Collection Date:**	5/19/2015 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150528A**	QC Batch: **R100639**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	23	0.44	1.0		mg/L	20	5/28/2015

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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-203
Lab Order:	N015805	**Collection Date:**	5/19/2015 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150528A**	QC Batch: **R100639**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	3.2	0.11	0.25		mg/L	5	5/28/2015

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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-51-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	5/28/2015

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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 1:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	54	1.1	2.5		mg/L	50	5/28/2015

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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 10:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	25	0.44	1.0		mg/L	20	5/28/2015

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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-260-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 11:23:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.64	0.022	0.050		mg/L	1	5/28/2015

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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 1:47:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	8.2	0.22	0.50		mg/L	10	5/28/2015

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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 8:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150528A** QC Batch: **R100639** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	14	0.44	1.0		mg/L	20	5/28/2015

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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68-240-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 10:03:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150528A**	QC Batch: **R100639**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	4.6	0.11	0.25		mg/L	5	5/28/2015

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: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100639** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **PBW** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013270**

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-R100639** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **LCSW** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.907	0.050	1.000	0	90.7	85	115				

Sample ID **N015741-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **ZZZZZZ** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.776	0.25						2.902	4.46	20	

Sample ID **N015741-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **ZZZZZZ** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.705	0.25	5.000	2.902	96.0	75	125				

Sample ID **N015741-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100639**
Client ID: **ZZZZZZ** Batch ID: **R100639** TestNo: **SM4500-NO3** Analysis Date: **5/28/2015** SeqNo: **2013275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.895	0.25	5.000	2.902	99.8	75	125	7.705	2.44	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-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-26-203
Lab Order:	N015805	**Collection Date:**	5/19/2015 12:36:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate	**6/2/2015**		Analyst: **CEI**
Arsenic	1.8	0.016	0.10		µg/L	1	6/8/2015 02:41 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 02:41 PM
Molybdenum	30	0.029	0.50		µg/L	1	6/8/2015 02:41 PM
Selenium	46	0.070	0.50		µg/L	1	6/8/2015 02:41 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-203
Lab Order:	N015805	**Collection Date:**	5/19/2015 2:52:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**				PrepDate	**6/2/2015**	Analyst: **CEI**
Arsenic	2.2	0.016	0.10		µg/L	1	6/8/2015 03:42 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 03:42 PM
Molybdenum	6.7	0.15	2.5		µg/L	5	6/8/2015 03:47 PM
Selenium	2.5	0.070	0.50		µg/L	1	6/8/2015 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: *10-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015805
Project: PG&E Topock
Lab ID: N015805-006

Client Sample ID: MW-51-203
Collection Date: 5/20/2015 2:52:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate	**6/2/2015**		Analyst: **CEI**
Arsenic	3.4	0.016	0.10		µg/L	1	6/8/2015 04:04 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 04:04 PM
Molybdenum	48	0.029	0.50		µg/L	1	6/8/2015 04:04 PM
Selenium	15	0.070	0.50		µg/L	1	6/8/2015 04:04 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-185-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 1:38:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate	**6/2/2015**		Analyst: **CEI**
Arsenic	1.2	0.016	0.10		µg/L	1	6/8/2015 04:15 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 04:15 PM
Molybdenum	11	0.029	0.50		µg/L	1	6/8/2015 04:15 PM
Selenium	300	0.35	2.5		µg/L	5	6/8/2015 04:20 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-67-225-203
Lab Order:	N015805	**Collection Date:**	5/20/2015 10:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate	**6/2/2015**		Analyst: **CEI**
Arsenic	3.2	0.016	0.10		µg/L	1	6/8/2015 04:26 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 04:26 PM
Molybdenum	39	0.029	0.50		µg/L	1	6/8/2015 04:26 PM
Selenium	73	0.070	0.50		µg/L	1	6/8/2015 04:26 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: *10-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015805
Project: PG&E Topock
Lab ID: N015805-009

Client Sample ID: MW-67-260-203
Collection Date: 5/20/2015 11:23:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**				PrepDate	**6/2/2015**	Analyst: **CEI**
Arsenic	8.2	0.016	0.10		µg/L	1	6/8/2015 04:48 PM
Manganese	23	0.023	0.50		µg/L	1	6/8/2015 04:48 PM
Molybdenum	89	0.15	2.5		µg/L	5	6/8/2015 04:53 PM
Selenium	ND	0.35	2.5		µg/L	5	6/8/2015 04:53 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 1:47:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**				PrepDate	**6/2/2015**	Analyst: **CEI**
Arsenic	1.3	0.016	0.10		µg/L	1	6/8/2015 04:59 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 04:59 PM
Molybdenum	3.5	0.029	0.50		µg/L	1	6/8/2015 04:59 PM
Selenium	3.0	0.070	0.50		µg/L	1	6/8/2015 04:59 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: *10-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-66-230-203
Lab Order:	N015805	**Collection Date:**	5/21/2015 8:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015805-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate	**6/2/2015**		Analyst: **CEI**
Arsenic	6.3	0.079	0.50		µg/L	5	6/8/2015 05:21 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 05:16 PM
Molybdenum	80	0.15	2.5		µg/L	5	6/8/2015 05:21 PM
Selenium	12	0.35	2.5		µg/L	5	6/8/2015 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: *10-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015805
Project: PG&E Topock
Lab ID: N015805-014

Client Sample ID: MW-68-240-203
Collection Date: 5/21/2015 10:03:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**				PrepDate	**6/2/2015**	Analyst: **CEI**
Arsenic	1.8	0.016	0.10		µg/L	1	6/8/2015 05:27 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 05:27 PM
Molybdenum	24	0.15	2.5		µg/L	5	6/8/2015 05:32 PM
Selenium	4.3	0.35	2.5		µg/L	5	6/8/2015 05:32 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

Date: *10-Jun-15*

CLIENT: CH2M HILL
Work Order: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50570** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **PBW** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018446**

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	0.231	0.50									
Selenium	ND	0.50									

Sample ID **LCS-50570** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **LCSW** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.835	0.10	10.00	0	98.4	85	115				
Manganese	99.854	0.50	100.0	0	99.9	85	115				
Molybdenum	10.100	0.50	10.00	0	101	85	115				
Selenium	8.910	0.50	10.00	0	89.1	85	115				

Sample ID **N015805-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.134	0.10	10.00	1.820	103	75	125				
Manganese	76.500	0.50	100.0	0	76.5	75	125				
Molybdenum	41.641	0.50	10.00	30.20	114	75	125				
Selenium	52.358	0.50	10.00	46.07	62.8	75	125				S

Sample ID **N015805-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.999	0.10	10.00	1.820	102	75	125	12.13	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		

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: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015805-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	75.790	0.50	100.0	0	75.8	75	125	76.50	0.932	20	
Molybdenum	40.555	0.50	10.00	30.20	104	75	125	41.64	2.64	20	
Selenium	53.459	0.50	10.00	46.07	73.8	75	125	52.36	2.08	20	S

Sample ID **N015830-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	72.186	0.50	100.0	0	72.2	75	125				S

Sample ID **N015830-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.663	0.50	10.00	1.250	124	75	125				
Molybdenum	72.234	2.5	10.00	57.06	152	75	125				S
Selenium	10.667	2.5	10.00	0	107	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 5/21/2015 2:05:35 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/26/2015
COC Number: 11

			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	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-26-203	5/19/2015	12:36	Water		x	x	x	x	x	N015805-1	3	
MW-59-100-203	5/19/2015	14:52	Water		x	x	x	x	x	-2	3	
MW-221-203	5/20/2015	6:40	Water	x						-3	1	
MW-222-203	5/20/2015	6:42	Water	x						-4	1	
MW-50-200-203	5/20/2015	8:07	Water		x		x			-5	2	
MW-51-203	5/20/2015	14:52	Water		x	x	x	x	x	-6	3	
MW-67-185-203	5/20/2015	13:38	Water		x	x	x	x	x	-7	3	
MW-67-225-203	5/20/2015	10:28	Water		x	x	x	x	x	-8	3	
MW-67-260-203	5/20/2015	11:23	Water		x	x	x	x	x	-9	3	
MW-223-203	5/21/2015	7:06	Water	x						-10	1	
MW-224-203	5/21/2015	7:05	Water	x						-11	1	
MW-57-070-203	5/21/2015	13:47	Water	x		x	x	x	x	-12	3	
MW-66-230-203	5/21/2015	8:32	Water		x	x	x	x	x	-13	3	

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by	[signature]	05-26-15 1800
Received by	[signature]	5/26/15 1800
Relinquished by	[signature]	5/26/15 2000
Received by	[signature]	5/26/15 2000

Shipping Details
Method of Shipment: courier
On Ice: yes / no 3-1°C
Airbill No: 1RH2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
April 7 - May 14, 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** *5/21/2015 2:05:36 PM* Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 5/26/2015
COC Number: 11

	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
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			
MW-68-240-203	5/21/2015	10:03	Water		X	X	X	X	X	ND15805 - 14	3	
MW-225-203	5/22/2015	9:32	Water	X						- 15	1	
MW-226-203	5/22/2015	9:30	Water	X						- 16	1	
										TOTAL NUMBER OF CONTAINERS	35	

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by	[signature]	05-26-15 1800
Received by	[signature]	5/26/15 1800
Relinquished by	[signature]	5/26/15 2000
Received by	[signature]	5/26/15 2000

Shipping Details
Method of Shipment: courier
On Ice: yes / no 3.1 oC
Airbill No: 1BA2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 7 - May 14, 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:	5/26/2015	Workorder:	N015805
Rep sample Temp (Deg C):	3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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: Sampler's initials were taken from the sample label.

Checklist Completed By: HG 5/27/2015

Reviewed By: 05/27/15

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 **N015805-011A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.2521 * 1

= 0.2521

Reporting result in two significant figures,

Cr^{+6}, µg/L = 0.25

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 **N015805-001A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 480.616 * 5

= 2403.08 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 2400

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 **N015805-001C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 1.1569 * 20

= 23.138 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 23 mg/L

REB 6/9/2015

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 **N015805-001B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 101.64504479 * 25 * (25/25)

= 2541.12611975

Reporting results in two significant figures,

Chromium, ug/L = 2500

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N015805
Test Method: EPA 6020
Analysis Date: 6/8 & 6/9/2015

Matrix: Water
Batch No.: 50570

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As & Mn. The calculated values are <25X RLs.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015805-001B-DT-5X	Arsenic	µg/L	1.865908	NA	1.819629	2.54%	10
N015805-001B-DT-125X	Chromium	µg/L	2640.882061	PASS	2541.126120	3.93%	10
N015805-001B-DT-5X	Manganese	µg/L	0	NA	0		10
N015805-001B-DT-5X	Molybdenum	µg/L	31.653108	PASS	30.201365	4.81%	10
N015805-001B-DT-5X	Selenium	µg/L	49.907662	PASS	46.074607	8.32%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *09-Jun-15*

CLIENT: CH2M HILL
Work Order: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N015805-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.600	0.10	10.00	1.820	108	80	120				
Manganese	77.741	0.50	100.0	0	77.7	80	120				S
Molybdenum	42.985	0.50	10.00	30.20	128	80	120				S
Selenium	54.522	0.50	10.00	46.07	84.5	80	120				

MS/MSD of Mn Mo are within criteria.

Nancy 6/10/2015

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	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: N015805
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N015805-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **100707**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/9/2015** SeqNo: **2018500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2564.595	25	10.00	2541	235	80	120				S

DT @125x is within criteria.

Nancy 6/10/2015

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	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		

June 11, 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.: N015830

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 28, 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:** *11-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015830

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 218.6:

Dilution was necessary for sample N015830-001 (MW-68BR-280-203) due to matrix interference. Sample was analyzed at lower dilution however Matrix Spike 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.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N015805-001B-MS, N015805-001B-MSD and N015830-001B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N015805-001B-MS, N015805-001B-MSD 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 samples N015830-001, N015830-002 and N015830-003 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.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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

Date: *11-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N015830
Contract No: 2015-GMP-203-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015830-001A	MW-68BR-280-203	Water	5/27/2015 12:16:00 PM	5/28/2015	6/11/2015
N015830-001B	MW-68BR-280-203	Water	5/27/2015 12:16:00 PM	5/28/2015	6/11/2015
N015830-001C	MW-68BR-280-203	Water	5/27/2015 12:16:00 PM	5/28/2015	6/11/2015
N015830-002A	MW-70BR-225-203	Water	5/27/2015 3:37:00 PM	5/28/2015	6/11/2015
N015830-002B	MW-70BR-225-203	Water	5/27/2015 3:37:00 PM	5/28/2015	6/11/2015
N015830-002C	MW-70BR-225-203	Water	5/27/2015 3:37:00 PM	5/28/2015	6/11/2015
N015830-003A	TW-01-203	Water	5/27/2015 9:28:00 AM	5/28/2015	6/11/2015
N015830-003B	TW-01-203	Water	5/27/2015 9:28:00 AM	5/28/2015	6/11/2015
N015830-003C	TW-01-203	Water	5/27/2015 9:28:00 AM	5/28/2015	6/11/2015
N015830-004A	MW-227-203	Water	5/28/2015 9:30:00 AM	5/28/2015	6/11/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68BR-280-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 12:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	6/4/2015 01:50 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150608A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/8/2015 05:38 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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 3:37:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	2300	6.9	50		µg/L	5	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	2400	2.1	25		µg/L	25	6/9/2015 11:36 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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 9:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150601E**	QC Batch: **R100606**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	2500	6.9	50		µg/L	5	6/1/2015
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_150609A**	QC Batch: **50570**			PrepDate		**6/2/2015**	Analyst: **CEI**
Chromium	2600	2.1	25		µg/L	25	6/9/2015 11:41 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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-227-203
Lab Order:	N015830	**Collection Date:**	5/28/2015 9:30:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150604A**	QC Batch: **R100680**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/4/2015 01:21 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

Date: *11-Jun-15*

CLIENT: CH2M HILL
Work Order: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100680** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **PBW** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016126**

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-R100680** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **LCSW** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.951	0.20	5.000	0	99.0	90	110				

Sample ID **N015805-012ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	409.980	10						407.5	0.606	20	

Sample ID **N015805-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	656.040	10	250.0	407.5	99.4	90	110				

Sample ID **N015805-012AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	657.320	10	250.0	407.5	99.9	90	110	656.0	0.195	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: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015805-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.162	0.20	1.000	0.1763	98.5	90	110				

Sample ID **N015805-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.185	0.20	1.000	0.1383	105	90	110				

Sample ID **N015805-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.219	0.20	1.000	0.1833	104	90	110				

Sample ID **N015805-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.236	0.20	1.000	0.2521	98.4	90	110				

Sample ID **N015805-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.159	0.20	1.000	0.1462	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: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015805-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.183	0.20	1.000	0.1246	106	90	110				

Sample ID **N015830-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.204	0.20	1.000	0.1732	103	90	110				

Sample ID **N015830-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.010	1.0	5.000	0	100	90	110				

Sample ID **N015885-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100680**
Client ID: **ZZZZZZ** Batch ID: **R100680** TestNo: **EPA 218.6** Analysis Date: **6/4/2015** SeqNo: **2016153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.427	0.20	1.000	1.382	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: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R100606** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **LCSW** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	98.426	10	100.0	0	98.4	85	115				

Sample ID **MB-R100606** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **PBW** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011630**

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

Sample ID **N015830-003ADUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2451.555	50						2455	0.144	20	

Sample ID **N015742-013AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	4850.990	100	2500	2398	98.1	85	115				

Sample ID **N015742-009AMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	25091.600	500	12500	12420	101	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: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **N015742-009AMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100606**
Client ID: **ZZZZZZ** Batch ID: **R100606** TestNo: **SM 3500-Cr B** Analysis Date: **6/1/2015** SeqNo: **2011649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	25229.650	500	12500	12420	102	85	115	25090	0.549	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: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-50570** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **PBW** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018393**

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

Sample ID **LCS-50570** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **LCSW** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.050	1.0	10.00	0	101	85	115				

Sample ID **N015830-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.934	1.0	10.00	0.5023	94.3	75	125				

Sample ID **N015805-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100707**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/9/2015** SeqNo: **2018501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2433.122	25	10.00	2541	-1080	75	125				S

Sample ID **N015805-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100707**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/9/2015** SeqNo: **2018502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2421.781	25	10.00	2541	-1190	75	125	2433	0.467	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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68BR-280-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 12:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.080	0.022	0.050		mg/L	1	6/1/2015

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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 3:37:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.8	0.11	0.25		mg/L	5	6/1/2015

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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 9:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150601I** QC Batch: **R100640** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	19	0.44	1.0		mg/L	20	6/1/2015

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: *11-Jun-15*

CLIENT: CH2M HILL
Work Order: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100640** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **PBW** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013298**

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-R100640** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **LCSW** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.934	0.050	1.000	0	93.4	85	115				

Sample ID **N015742-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.151	0.050						0.1654	9.30	20	

Sample ID **N015742-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.173	0.050	1.000	0.1654	101	75	125				

Sample ID **N015742-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100640**
Client ID: **ZZZZZZ** Batch ID: **R100640** TestNo: **SM4500-NO3** Analysis Date: **6/1/2015** SeqNo: **2013305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.267	0.050	1.000	0.1654	110	75	125	1.173	7.67	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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-68BR-280-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 12:16:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**				PrepDate	**6/2/2015**	Analyst: **CEI**
Arsenic	1.3	0.079	0.50		µg/L	5	6/8/2015 05:55 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 05:38 PM
Molybdenum	57	0.15	2.5		µg/L	5	6/8/2015 05:55 PM
Selenium	ND	0.35	2.5		µg/L	5	6/8/2015 05:55 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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-70BR-225-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 3:37:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**				PrepDate	**6/2/2015**	Analyst: **CEI**
Arsenic	1.9	0.016	0.10		µg/L	1	6/8/2015 06:11 PM
Manganese	ND	0.023	0.50		µg/L	1	6/8/2015 06:11 PM
Molybdenum	18	0.15	2.5		µg/L	5	6/8/2015 06:17 PM
Selenium	2.5	0.35	2.5		µg/L	5	6/8/2015 06:17 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: *11-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-203
Lab Order:	N015830	**Collection Date:**	5/27/2015 9:28:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N015830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150608A**	QC Batch: **50570**				PrepDate	**6/2/2015**	Analyst: **CEI**
Molybdenum	15	0.15	2.5		µg/L	5	6/8/2015 06:28 PM
Selenium	14	0.070	0.50		µg/L	1	6/8/2015 06:22 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

Date: *11-Jun-15*

CLIENT: CH2M HILL
Work Order: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50570** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **PBW** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018446**

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	0.231	0.50									
Selenium	ND	0.50									

Sample ID **LCS-50570** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **LCSW** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.835	0.10	10.00	0	98.4	85	115				
Manganese	99.854	0.50	100.0	0	99.9	85	115				
Molybdenum	10.100	0.50	10.00	0	101	85	115				
Selenium	8.910	0.50	10.00	0	89.1	85	115				

Sample ID **N015805-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.134	0.10	10.00	1.820	103	75	125				
Manganese	76.500	0.50	100.0	0	76.5	75	125				
Molybdenum	41.641	0.50	10.00	30.20	114	75	125				
Selenium	52.358	0.50	10.00	46.07	62.8	75	125				S

Sample ID **N015805-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.999	0.10	10.00	1.820	102	75	125	12.13	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		

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: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015805-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	75.790	0.50	100.0	0	75.8	75	125	76.50	0.932	20	
Molybdenum	40.555	0.50	10.00	30.20	104	75	125	41.64	2.64	20	
Selenium	53.459	0.50	10.00	46.07	73.8	75	125	52.36	2.08	20	S

Sample ID **N015830-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	72.186	0.50	100.0	0	72.2	75	125				S

Sample ID **N015830-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/2/2015** RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.663	0.50	10.00	1.250	124	75	125				
Molybdenum	72.234	2.5	10.00	57.06	152	75	125				S
Selenium	10.667	2.5	10.00	0	107	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

5/28/2015 12:28:26 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number
Task Order
Project 2015-GMP-203-Q2
Turnaround Time 10 Days
Shipping Date: 4/2/2015
COC Number: GMP-203-Q2

			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	Metals (6020A) Field Filtered As,Mn	Metals (6020A) Field Filtered Chromium	Metals (6020A) Field Filtered Mo,Se	Nitrate/Nitrite (SM4500NO3)		Number of Containers	COMMENTS
MW-68BR-280-203	5/27/2015	12:16	Water	X		X	X	X	X	N015830-1	3	
MW-70BR-225-203	5/27/2015	15:37	Water		X	X	X	X	X	-2	3	
TW-01-203	5/27/2015	9:28	Water		X		X	X	X	-3	3	
MW-227-203	5/28/2015	9:30	Water	X						-4	1	
										TOTAL NUMBER OF CONTAINERS	10	

Signatures	Date/Time
Approved by	5-28-15
Sampled by	1530
Relinquished by	
Received by	5/28/15@1500
Relinquished by	5/28/15@1734
Received by	

Shipping Details

Method of Shipment: FedEx
On Ice: yes / no 4.8°C
Airbill No: 1C5/112#1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
April 7 - May 14, 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:	5/28/2015	Workorder:	N015830
Rep sample Temp (Deg C):	4.8	IR Gun ID:	1
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 5/29/2015

Reviewed By: 06/02/15

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 **N015830-004A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.1732 * 1

= 0.1732

Reporting result in two significant figures,

Cr^{+6}, µg/L = 0.17

Since PQL = 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 **N015830-002A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 456.686 * 5

= 2283.43 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 2300

6/2/2015

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 **N015830-001C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.0803 * 1

= 0.0803 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.080 mg/L

REB 6/11/2015

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 **N015830-002B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 96.019196952 * 25 * (25/25)

= 2400.4799238

Reporting results in two significant figures,

Chromium, ug/L = 2400

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N015830 ~~N015805~~
Test Method: EPA 6020
Analysis Date: 6/8 & 6/9/2015

Matrix: Water
Batch No.: 50570

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As & Mn. The calculated values are <25X RLs.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015805-001B-DT-5X	Arsenic	µg/L	1.865908	NA	1.819629	2.54%	10
N015805-001B-DT-125X	Chromium	µg/L	2640.882061	PASS	2541.126120	3.93%	10
N015805-001B-DT-5X	Manganese	µg/L	0	NA	0		10
N015805-001B-DT-5X	Molybdenum	µg/L	31.653108	PASS	30.201365	4.81%	10
N015805-001B-DT-5X	Selenium	µg/L	49.907662	PASS	46.074607	8.32%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *09-Jun-15*

CLIENT: CH2M HILL
Work Order: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N015805-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100706**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/8/2015** SeqNo: **2018451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.600	0.10	10.00	1.820	108	80	120				
Manganese	77.741	0.50	100.0	0	77.7	80	120				S
Molybdenum	42.985	0.50	10.00	30.20	128	80	120				S
Selenium	54.522	0.50	10.00	46.07	84.5	80	120				

MS/MSD of Mn Mo are within criteria.

6/10/2015

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	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: N015830
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N015805-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **100707**
Client ID: **ZZZZZZ** Batch ID: **50570** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/9/2015** SeqNo: **2018500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2564.595	25	10.00	2541	235	80	120				S

DT @125x is within criteria.

6/10/2015

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	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		

June 22, 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.: N015876

RE: PG&E Topock, 658274.01.IM.OP.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on June 02, 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.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Calcium on QC sample N015876-001B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N015876-002B-MS2 and N015876-002B-MSD2 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
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

Date: *19-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N015876
Contract No: IM3PLANT-EW

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015876-001A	PE-01-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-001B	PE-01-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-001C	PE-01-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-001D	PE-01-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-001E	PE-01-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-002A	TW-03D-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-002B	TW-03D-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-002C	TW-03D-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-002D	TW-03D-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015
N015876-002E	TW-03D-231	Water	6/2/2015 12:15:00 PM	6/2/2015	6/22/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150603B**	QC Batch: **R100642**			PrepDate			Analyst: **LR**
Specific Conductance	4200	0.10	0.10		umhos/cm	1	6/3/2015 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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150603B**	QC Batch: **R100642**			PrepDate			Analyst: **LR**
Specific Conductance	7700	0.10	0.10		umhos/cm	1	6/3/2015 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

Date: *19-Jun-15*

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N015875-001ADUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **100642**
Client ID: **ZZZZZZ** Batch ID: **R100642** TestNo: **EPA 120.1** Analysis Date: **6/3/2015** SeqNo: **2013365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6930.000	0.10						6910	0.289	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
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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150603F**	QC Batch: **50589**				PrepDate	**6/3/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2400	33	33		mg/L	1	6/3/2015 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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_150603F**	QC Batch: **50589**				PrepDate	**6/3/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	6/3/2015 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		

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-50589** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/3/2015** RunNo: **100658**
Client ID: **PBW** Batch ID: **50589** TestNo: **SM2540C** Analysis Date: **6/3/2015** SeqNo: **2013727**

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-50589** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/3/2015** RunNo: **100658**
Client ID: **LCSW** Batch ID: **50589** TestNo: **SM2540C** Analysis Date: **6/3/2015** SeqNo: **2013728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	989.000	10	1000	0	98.9	80	120				

Sample ID **N015875-001A-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/3/2015** RunNo: **100658**
Client ID: **ZZZZZZ** Batch ID: **50589** TestNo: **SM2540C** Analysis Date: **6/3/2015** SeqNo: **2013730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4100.000	50						4065	0.857	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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150619C**	QC Batch: **50708**			PrepDate	**6/18/2015**		Analyst: **CEI**
Calcium	120000	31	500		µg/L	1	6/19/2015 02:44 PM
Iron	ND	17	20		µg/L	1	6/19/2015 02:44 PM
Magnesium	23000	86	100		µg/L	1	6/19/2015 02:44 PM
Sodium	780000	290	12000		µg/L	25	6/19/2015 12:14 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_150619C**	QC Batch: **50708**			PrepDate	**6/18/2015**		Analyst: **CEI**
Calcium	230000	31	500		µg/L	1	6/19/2015 02:49 PM
Iron	ND	17	20		µg/L	1	6/19/2015 02:49 PM
Magnesium	28000	86	100		µg/L	1	6/19/2015 02:49 PM
Sodium	1400000	1500	62000		µg/L	125	6/19/2015 12:35 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: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-50708** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/18/2015** RunNo: **100862**
Client ID: **PBW** Batch ID: **50708** TestNo: **EPA 200.7** Analysis Date: **6/19/2015** SeqNo: **2025962**

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

Sample ID **LCS2-50708** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/18/2015** RunNo: **100862**
Client ID: **LCSW** Batch ID: **50708** TestNo: **EPA 200.7** Analysis Date: **6/19/2015** SeqNo: **2025963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19231.701	500	20000	0	96.2	85	115				

Sample ID **N015876-002B-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/18/2015** RunNo: **100862**
Client ID: **ZZZZZZ** Batch ID: **50708** TestNo: **EPA 200.7** Analysis Date: **6/19/2015** SeqNo: **2025976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1468187.815	62000	20000	1425000	216	75	125				S

Sample ID **N015876-002B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/18/2015** RunNo: **100862**
Client ID: **ZZZZZZ** Batch ID: **50708** TestNo: **EPA 200.7** Analysis Date: **6/19/2015** SeqNo: **2025977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1485473.545	62000	20000	1425000	302	75	125	1468000	1.17	20	S

Sample ID **MB-50708** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/18/2015** RunNo: **100863**
Client ID: **PBW** Batch ID: **50708** TestNo: **EPA 200.7** Analysis Date: **6/19/2015** SeqNo: **2025989**

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		

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-50708** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/18/2015** RunNo: **100863**
Client ID: **LCSW** Batch ID: **50708** TestNo: **EPA 200.7** Analysis Date: **6/19/2015** SeqNo: **2025990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9477.135	500	10000	0	94.8	85	115				
Iron	100.457	20	100.0	0	100	85	115				
Magnesium	9711.056	100	10000	0	97.1	85	115				

Sample ID **N015876-001B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/18/2015** RunNo: **100863**
Client ID: **ZZZZZZ** Batch ID: **50708** TestNo: **EPA 200.7** Analysis Date: **6/19/2015** SeqNo: **2025995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	127874.064	500	10000	116700	112	75	125				
Iron	121.604	20	100.0	0	122	75	125				
Magnesium	34690.993	100	10000	22880	118	75	125				

Sample ID **N015876-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/18/2015** RunNo: **100863**
Client ID: **ZZZZZZ** Batch ID: **50708** TestNo: **EPA 200.7** Analysis Date: **6/19/2015** SeqNo: **2025996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	130367.482	500	10000	116700	136	75	125	127900	1.93	20	S
Iron	121.687	20	100.0	0	122	75	125	121.6	0.0688	20	
Magnesium	34624.933	100	10000	22880	117	75	125	34690	0.191	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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150604B**	QC Batch: **50587**				PrepDate	**6/4/2015**	Analyst: **CEI**
Manganese	54	0.023	0.50		µg/L	1	6/4/2015 12:34 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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150604B**	QC Batch: **50587**				PrepDate	**6/4/2015**	Analyst: **CEI**
Manganese	ND	0.023	0.50		µg/L	1	6/4/2015 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		

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-50587** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **6/4/2015** RunNo: **100673**
Client ID: **PBW** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015528**

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

Sample ID **LCS-50587** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **6/4/2015** RunNo: **100673**
Client ID: **LCSW** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.103	0.50	100.0	0	97.1	85	115				

Sample ID **N015882-001H-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **6/4/2015** RunNo: **100673**
Client ID: **ZZZZZZ** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.371	0.50	100.0	0	88.4	75	125				

Sample ID **N015882-001H-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **6/4/2015** RunNo: **100673**
Client ID: **ZZZZZZ** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.816	0.50	100.0	0	88.8	75	125	88.37	0.502	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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150603B** QC Batch: **R100686** PrepDate							Analyst: **RB**
Hexavalent Chromium	3.4	0.015	0.20		µg/L	1	6/3/2015 08:09 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **ICP7_150604B** QC Batch: **50587** PrepDate **6/4/2015**							Analyst: **CEI**
Chromium	3.1	0.086	1.0		µg/L	1	6/4/2015 12:34 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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_150615H**	QC Batch: **R100814**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	700	2.8	20		µg/L	2	6/15/2015
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_150605A**	QC Batch: **50587**			PrepDate		**6/4/2015**	Analyst: **CEI**
Chromium	650	0.43	5.0		µg/L	5	6/5/2015 04:48 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: *19-Jun-15*

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-50587** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/4/2015** RunNo: **100673**
Client ID: **PBW** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015252**

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

Sample ID **LCS-50587** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/4/2015** RunNo: **100673**
Client ID: **LCSW** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.826	1.0	10.00	0	98.3	85	115				

Sample ID **N015882-001H-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/4/2015** RunNo: **100673**
Client ID: **ZZZZZZ** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.368	1.0	10.00	0	93.7	75	125				

Sample ID **N015882-001H-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/4/2015** RunNo: **100673**
Client ID: **ZZZZZZ** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.209	1.0	10.00	0	92.1	75	125	9.368	1.71	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: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	MB-R100686	SampType:	MBLK	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100686
Client ID:	PBW	Batch ID:	R100686	TestNo:	EPA 218.6			Analysis Date:	6/3/2015	SeqNo:	2016929

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-R100686	SampType:	LCS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100686
Client ID:	LCSW	Batch ID:	R100686	TestNo:	EPA 218.6			Analysis Date:	6/3/2015	SeqNo:	2016930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.010	0.20	5.000	0	100	90	110				

Sample ID	N015890-004A-DUP	SampType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100686
Client ID:	ZZZZZZ	Batch ID:	R100686	TestNo:	EPA 218.6			Analysis Date:	6/3/2015	SeqNo:	2016935

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.379	1.0						12.79	4.47	20	

Sample ID	N015890-001A-MS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100686
Client ID:	ZZZZZZ	Batch ID:	R100686	TestNo:	EPA 218.6			Analysis Date:	6/3/2015	SeqNo:	2016939

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.571	1.0	25.00	23.79	99.1	90	110				

Sample ID	N015890-001A-MSD	SampType:	MSD	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100686
Client ID:	ZZZZZZ	Batch ID:	R100686	TestNo:	EPA 218.6			Analysis Date:	6/3/2015	SeqNo:	2016940

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.701	1.0	25.00	23.79	99.6	90	110	48.57	0.267	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: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N015875-001D-MS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100686
Client ID:	ZZZZZZ	Batch ID:	R100686	TestNo:	EPA 218.6			Analysis Date:	6/3/2015	SeqNo:	2016946

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1013.850	20	500.0	521.0	98.6	90	110				

Sample ID	N015875-002C-MS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100686
Client ID:	ZZZZZZ	Batch ID:	R100686	TestNo:	EPA 218.6			Analysis Date:	6/3/2015	SeqNo:	2016948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.200	0.20	1.000	0.1451	105	90	110				

Sample ID	N015876-001C-MS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100686
Client ID:	ZZZZZZ	Batch ID:	R100686	TestNo:	EPA 218.6			Analysis Date:	6/3/2015	SeqNo:	2016952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.550	0.20	5.000	3.378	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: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **LCS-R100814** SampType: **LCS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100814**
Client ID: **LCSW** Batch ID: **R100814** TestNo: **SM 3500-Cr B** Analysis Date: **6/15/2015** SeqNo: **2023914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	94.683	10	100.0	0	94.7	85	115				

Sample ID **MB-R100814** SampType: **MBLK** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100814**
Client ID: **PBW** Batch ID: **R100814** TestNo: **SM 3500-Cr B** Analysis Date: **6/15/2015** SeqNo: **2023915**

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

Sample ID **N015876-002DDUP** SampType: **DUP** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100814**
Client ID: **ZZZZZZ** Batch ID: **R100814** TestNo: **SM 3500-Cr B** Analysis Date: **6/15/2015** SeqNo: **2023917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	702.636	20						697.6	0.726	20	

Sample ID **N015876-002DMS** SampType: **MS** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100814**
Client ID: **ZZZZZZ** Batch ID: **R100814** TestNo: **SM 3500-Cr B** Analysis Date: **6/15/2015** SeqNo: **2023918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1211.412	20	500.0	697.6	103	85	115				

Sample ID **N015876-002DMSD** SampType: **MSD** TestCode: **3500_CrBPG** Units: **µg/L** Prep Date: RunNo: **100814**
Client ID: **ZZZZZZ** Batch ID: **R100814** TestNo: **SM 3500-Cr B** Analysis Date: **6/15/2015** SeqNo: **2023919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1204.170	20	500.0	697.6	101	85	115	1211	0.600	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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150603E**	QC Batch: **R100656**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	200	1.2	5.0		mg/L	1	6/3/2015 02:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	6/3/2015 02:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	6/3/2015 02:15 PM
Alkalinity, Total (As CaCO3)	200	1.2	5.0		mg/L	1	6/3/2015 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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_150603E**	QC Batch: **R100656**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	140	1.2	5.0		mg/L	1	6/3/2015 02:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	6/3/2015 02:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	6/3/2015 02:15 PM
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	6/3/2015 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		

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R100656** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100656**
Client ID: **LCSW** Batch ID: **R100656** TestNo: **SM 2320 B** Analysis Date: **6/3/2015** SeqNo: **2016031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	95.041	5.0	100.0	0	95.0	85	115				
Alkalinity, Total (As CaCO3)	97.107	5.0	100.0	0	97.1	85	115				

Sample ID **MB-R100656** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100656**
Client ID: **PBW** Batch ID: **R100656** TestNo: **SM 2320 B** Analysis Date: **6/3/2015** SeqNo: **2016032**

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 **N015875-001ADUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100656**
Client ID: **ZZZZZZ** Batch ID: **R100656** TestNo: **SM 2320 B** Analysis Date: **6/3/2015** SeqNo: **2016034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	150.826	5.0						150.8	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)	150.826	5.0						150.8	0	30	

Sample ID **N015876-001AMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100656**
Client ID: **ZZZZZZ** Batch ID: **R100656** TestNo: **SM 2320 B** Analysis Date: **6/3/2015** SeqNo: **2016036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	311.983	5.0	100.0	204.5	107	75	125				
Alkalinity, Total (As CaCO3)	311.983	5.0	100.0	204.5	107	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: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N015876-001AMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **100656**
Client ID: **ZZZZZZ** Batch ID: **R100656** TestNo: **SM 2320 B** Analysis Date: **6/3/2015** SeqNo: **2016037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	307.851	5.0	100.0	204.5	103	75	125	312.0	1.33	20	
Alkalinity, Total (As CaCO3)	307.851	5.0	100.0	204.5	103	75	125	312.0	1.33	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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150605A** QC Batch: **R100689** PrepDate Analyst: **QBM**							
Chloride	980	6.3	100		mg/L	200	6/5/2015 03:59 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150605A** QC Batch: **R100689** PrepDate Analyst: **QBM**							
Sulfate	340	1.6	25		mg/L	50	6/5/2015 04:13 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: *19-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N015876-002

Client Sample ID: TW-03D-231
Collection Date: 6/2/2015 12:15:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150605A** QC Batch: **R100689** PrepDate Analyst: **QBM**							
Chloride	2000	16	250		mg/L	500	6/5/2015 04:57 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150605A** QC Batch: **R100689** PrepDate Analyst: **QBM**							
Sulfate	470	3.3	50		mg/L	100	6/5/2015 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

Date: *19-Jun-15*

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R100689_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **100689**
Client ID: **PBW** Batch ID: **R100689** TestNo: **EPA 300.0** Analysis Date: **6/5/2015** SeqNo: **2017118**

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

Sample ID **LCS-R100689_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **100689**
Client ID: **LCSW** Batch ID: **R100689** TestNo: **EPA 300.0** Analysis Date: **6/5/2015** SeqNo: **2017119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.366	0.50	2.500	0	94.6	90	110				

Sample ID **N015876-001ADUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **100689**
Client ID: **ZZZZZZ** Batch ID: **R100689** TestNo: **EPA 300.0** Analysis Date: **6/5/2015** SeqNo: **2017126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	987.000	100						978.8	0.834	20	

Sample ID **N015876-002AMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **100689**
Client ID: **ZZZZZZ** Batch ID: **R100689** TestNo: **EPA 300.0** Analysis Date: **6/5/2015** SeqNo: **2017127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3193.000	250	1250	1998	95.6	80	120				

Sample ID **N015876-002AMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **100689**
Client ID: **ZZZZZZ** Batch ID: **R100689** TestNo: **EPA 300.0** Analysis Date: **6/5/2015** SeqNo: **2017128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3217.500	250	1250	1998	97.6	80	120	3193	0.764	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: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R100689_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100689
Client ID:	PBW	Batch ID:	R100689	TestNo:	EPA 300.0			Analysis Date:	6/5/2015	SeqNo:	2017192

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

Sample ID	LCS-R100689_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100689
Client ID:	LCSW	Batch ID:	R100689	TestNo:	EPA 300.0			Analysis Date:	6/5/2015	SeqNo:	2017193

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.659	0.50	5.000	0	93.2	90	110				

Sample ID	N015902-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100689
Client ID:	ZZZZZZ	Batch ID:	R100689	TestNo:	EPA 300.0			Analysis Date:	6/5/2015	SeqNo:	2017197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	127.800	10						131.7	3.01	20	

Sample ID	N015902-002CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100689
Client ID:	ZZZZZZ	Batch ID:	R100689	TestNo:	EPA 300.0			Analysis Date:	6/5/2015	SeqNo:	2017199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	239.920	10	100.0	141.7	98.2	80	120				

Sample ID	N015902-002CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	100689
Client ID:	ZZZZZZ	Batch ID:	R100689	TestNo:	EPA 300.0			Analysis Date:	6/5/2015	SeqNo:	2017200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	239.540	10	100.0	141.7	97.9	80	120	239.9	0.159	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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	PE-01-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150616D** QC Batch: **R100822** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	6/16/2015

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: *19-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-03D-231
Lab Order:	N015876	**Collection Date:**	6/2/2015 12:15:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	**Matrix:**	WATER
Lab ID:	N015876-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150616D** QC Batch: **R100822** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.5	0.11	0.25		mg/L	5	6/16/2015

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

Date: *19-Jun-15*

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100822** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100822**
Client ID: **PBW** Batch ID: **R100822** TestNo: **SM4500-NO3** Analysis Date: **6/16/2015** SeqNo: **2023993**

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-R100822** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100822**
Client ID: **LCSW** Batch ID: **R100822** TestNo: **SM4500-NO3** Analysis Date: **6/16/2015** SeqNo: **2023994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	85	115				

Sample ID **N015875-002EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100822**
Client ID: **ZZZZZZ** Batch ID: **R100822** TestNo: **SM4500-NO3** Analysis Date: **6/16/2015** SeqNo: **2023996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.617	0.25						2.624	0.267	20	

Sample ID **N015875-002EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100822**
Client ID: **ZZZZZZ** Batch ID: **R100822** TestNo: **SM4500-NO3** Analysis Date: **6/16/2015** SeqNo: **2023997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.044	0.25	2.500	2.624	96.8	75	125				

Sample ID **N015875-002EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100822**
Client ID: **ZZZZZZ** Batch ID: **R100822** TestNo: **SM4500-NO3** Analysis Date: **6/16/2015** SeqNo: **2023998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.422	0.25	2.500	2.624	112	75	125	5.044	7.22	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"

WORK ORDER: N015876

ANALYST LIST

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0, SM 3500-Cr B
Claire Ignacio	EPA 200.7, EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320B
Ryan Balilu	EPA 218.6, SM 4500-NO3F

CH2MHILL

CHAIN OF CUSTODY RECORD

6/1/2015 5:43:22 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-231
Turnaround Time 10 Days
Shipping Date: 6/2/2015
COC Number: 231

			Container:	1 Liter Poly	1 Liter Poly	1 Liter Poly	500 ml Poly	500 ml Poly	250 ml 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			
			Filtered:	NA	NA	NA	Lab	Lab	NA	NA	NA	NA			
			Holding Time:	7	7	7	180	180	1	28	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)	SM3500-Cr6 LabFilt	TDS (SM2540C)		Number of Containers	COMMENTS
PE-01-231	6/2/2015	1215	Water	x	x	x	x	x	x	x		x	N015876-1	4	
TW-03D-231	6/2/2015	1215	Water	x	x	x	x	x		x	x	x	1 -2	4	
													TOTAL NUMBER OF CONTAINERS	8	

	Signatures	Date/Time
Approved by		
Sampled by	Josh Rosenberg / [signature]	6-2-15 / 1250
Relinquished by	Josh Rosenberg / [signature]	6-2-15 / 1315
Received by	[signature]	6/2/15 1315
Relinquished by	[signature]	6/2/15 1544
Received by	[signature]	6/2/15

Shipping Details

Method of Shipment: FedEx
On Ice: yes / no 2-3°C 1RH2
Airbill No:
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:	6/2/2015	Workorder:	N015876
Rep sample Temp (Deg C):	2.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 were lab preserved for Metals and NO2/NO3.
Sample for Cr6 was lab filtered and preserved.

Checklist Completed By: JPG For: 6/3/2015

Reviewed By: 06/03/15

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 **N015876-002A,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(55.8185-55.7300)*1000000}{20}$$

$$= 4425 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 4400 mg/L

Julia Ramit 6/5/2015

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:6/4/15								
MB-50589	100	76.8401	76.8404	3	1	3		
LCS-50589	100	77.0926	77.1915	989	1	989		
N015875-001A	20	54.8263	54.9076	813	5	4065	6910	0.588
N015875-001A DUP	20	53.9702	54.0522	820	5	4100	6910	0.593
N015875-002B	20	57.0455	57.124	785	5	3925	6950	0.565
N015876-001A	30	53.835	53.9085	735	3.33333333	2450	4220	0.581
N015876-002A	20	55.73	55.8185	885	5	4425	7680	0.576
N015877-001A	100	61.2353	61.289	537	1	537	799	0.672
N015877-002A	40	64.2422	64.3417	995	2.5	2487.5	3530	0.705
N015877-003A	30	55.1264	55.2082	818	3.33333333	2726.66667	4040	0.675

Silia Ramit 6/5/2015

Sample Calculation

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

FORMULA:

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

Calcium ,µg/L = A * DF * PF * 1000

where:

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

For Sample **N015876-002B** , the concentration in µg/L is calculated as follows:

Calcium ,µg/L = 227.88 * 1 * (25 / 25) * 1000

Calcium ,µg/L = 227880

Reporting results in two significant figures,

Calcium ,µg/L = 230000

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015876
Test Method: EPA 200.7
Analysis Date: 06/19/15

Matrix: Water
Batch No.: 50708

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

Comments:

Analyzed By: Mary Claire E. Ignacio

Dilution test is not applicable to Fe. The calculated value is < 25X RL.
Dilution test failed for Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015876-001B-DT 5X	Calcium	µg/L	125440.00	PASS	116720.00	7.47%	10
N015876-001B-DT 5X	Iron	µg/L	0.00	NA	0.00		10
N015876-001B-DT 5X	Magnesium	µg/L	33524.50	FAIL	22877.00	46.54%	10
N015876-~~001B~~ 002B-DT ~~125X~~ 625X	Sodium	µg/L	1439812.54	PASS	1425059.26	1.04%	10

Note: NA - Not Applicable

Mary 6/19/2015
for

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID: **N015876-002B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **100862**
Client ID: **ZZZZZZ**	Batch ID: **50708**	TestNo: **EPA 200.7**		Analysis Date: **6/19/2015**	SeqNo: **2025975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1496529.573	62000	20000	1425000	357	80	120				S

Sample ID: **N015876-001B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **100863**
Client ID: **ZZZZZZ**	Batch ID: **50708**	TestNo: **EPA 200.7**		Analysis Date: **6/19/2015**	SeqNo: **2025994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	139949.287	500	10000	116700	232	80	120				S
Iron	110.233	20	100.0	0	110	80	120				
Magnesium	38023.708	100	10000	22880	151	80	120				S

DT of Na @625x and Ca @5x are within criteria.

6/19/2015

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: 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 **N015876-001B,** the concentration in ug/L is calculated as follows:

Chromium, ug/L = 3.11667293840351 * 1 * (25/25)

= 3.11667293840351

Reporting results in two significant figures,

Chromium, ug/L = 3.1

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015876
Test Method: EPA 200.8
Analysis Date: 6/4/2015

Matrix: Water
Batch No.: 50587

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Mn. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015882-001H-DT 5X	Chromium	µg/L	0	NA	0		10
N015882-001H-DT 5X	Manganese	µg/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories

Date: *08-Jun-15*

CLIENT: CH2M HILL
Work Order: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N015882-001H-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **100673**
Client ID: **ZZZZZZ** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	86.944	0.50	100.0	0	86.9	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: N015876
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **N015882-001H-PS** SampType: **PS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **100673**
Client ID: **ZZZZZZ** Batch ID: **50587** TestNo: **EPA 200.8** Analysis Date: **6/4/2015** SeqNo: **2015256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.219	1.0	10.00	0	92.2	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 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:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

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

For **N015876-001C,** concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 3.3781 * 1$$

$$= 3.3781$$

Reporting result in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 3.4}$$

Sample ID: **N015876-001A @ pH 7.68**

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) (12.10mL)

= **0.020661509 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 = (9.90) (0.020661509 N) (1) * 1000

= 204.5489391 **mg/L**

Reporting results in two significant figures,

= 200 **mg/L** as CaCO3

Silia Ramit 6/5/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

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

= (0) (0.020661509 N) (1) * 1000

= **0**

Total Alkalinity

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

= (9.90 mL) (0.020661509) (1) * 1000

= 204.5489391 **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 $CaCO_3$ = 204.5489391 **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 $CaCO_3$ = 200 **mg/L**

Julia Ramit 6/5/2015

Sample Calculation

METHOD: EPA 300.0
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 **N015876-001A** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.894 * ~~1~~ 200

= 978.8

Reporting results in two significant figures,

Chloride, mg/L = 980

Nancy 6/15/2015
for

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 **N015876-002D,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 348.777 * 2

= 697.554 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 700

6/17/2015

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 **N015876-002C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6959 * 5

= 3.4795 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 3.5 mg/L

June 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 No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N015932

RE: PG&E Topock, WW-PGE-2623, 658

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on June 09, 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, WW-PGE-2623, 658
Lab Order: N015932

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 6010B_Total:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Iron on QC sample N015932-001B-MSD possibly due to matrix interference. 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
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

Date: *23-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock, WW-PGE-2623, 658
Lab Order: N015932
Contract No: 2015-RMP-204

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015932-001A	C-BNS-D-204	Water	6/9/2015 11:30:00 AM	6/9/2015	6/23/2015
N015932-001B	C-BNS-D-204	Water	6/9/2015 11:30:00 AM	6/9/2015	6/23/2015
N015932-001C	C-BNS-D-204	Water	6/9/2015 11:30:00 AM	6/9/2015	6/23/2015
N015932-001D	C-BNS-D-204	Water	6/9/2015 11:30:00 AM	6/9/2015	6/23/2015
N015932-001E	C-BNS-D-204	Water	6/9/2015 11:30:00 AM	6/9/2015	6/23/2015
N015932-002A	C-I-3-D-204	Water	6/9/2015 9:54:00 AM	6/9/2015	6/23/2015
N015932-002B	C-I-3-D-204	Water	6/9/2015 9:54:00 AM	6/9/2015	6/23/2015
N015932-002C	C-I-3-D-204	Water	6/9/2015 9:54:00 AM	6/9/2015	6/23/2015
N015932-002D	C-I-3-D-204	Water	6/9/2015 9:54:00 AM	6/9/2015	6/23/2015
N015932-002E	C-I-3-D-204	Water	6/9/2015 9:54:00 AM	6/9/2015	6/23/2015
N015932-003A	C-I-3-S-204	Water	6/9/2015 10:02:00 AM	6/9/2015	6/23/2015
N015932-003B	C-I-3-S-204	Water	6/9/2015 10:02:00 AM	6/9/2015	6/23/2015
N015932-003C	C-I-3-S-204	Water	6/9/2015 10:02:00 AM	6/9/2015	6/23/2015
N015932-003D	C-I-3-S-204	Water	6/9/2015 10:02:00 AM	6/9/2015	6/23/2015
N015932-003E	C-I-3-S-204	Water	6/9/2015 10:02:00 AM	6/9/2015	6/23/2015
N015932-004A	C-MW-80-204	Water	6/9/2015 10:16:00 AM	6/9/2015	6/23/2015
N015932-005A	C-MW-81-204	Water	6/9/2015 12:10:00 PM	6/9/2015	6/23/2015
N015932-006A	C-R22A-D-204	Water	6/9/2015 10:48:00 AM	6/9/2015	6/23/2015
N015932-006B	C-R22A-D-204	Water	6/9/2015 10:48:00 AM	6/9/2015	6/23/2015
N015932-006C	C-R22A-D-204	Water	6/9/2015 10:48:00 AM	6/9/2015	6/23/2015
N015932-006D	C-R22A-D-204	Water	6/9/2015 10:48:00 AM	6/9/2015	6/23/2015
N015932-006E	C-R22A-D-204	Water	6/9/2015 10:48:00 AM	6/9/2015	6/23/2015
N015932-007A	C-R22A-S-204	Water	6/9/2015 11:02:00 AM	6/9/2015	6/23/2015
N015932-007B	C-R22A-S-204	Water	6/9/2015 11:02:00 AM	6/9/2015	6/23/2015
N015932-007C	C-R22A-S-204	Water	6/9/2015 11:02:00 AM	6/9/2015	6/23/2015
N015932-007D	C-R22A-S-204	Water	6/9/2015 11:02:00 AM	6/9/2015	6/23/2015
N015932-007E	C-R22A-S-204	Water	6/9/2015 11:02:00 AM	6/9/2015	6/23/2015
N015932-008A	C-R27-D-204	Water	6/9/2015 11:44:00 AM	6/9/2015	6/23/2015
N015932-008B	C-R27-D-204	Water	6/9/2015 11:44:00 AM	6/9/2015	6/23/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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
Project: PG&E Topock, WW-PGE-2623, 658
Lab Order: N015932
Contract No: 2015-RMP-204

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015932-008C	C-R27-D-204	Water	6/9/2015 11:44:00 AM	6/9/2015	6/23/2015
N015932-008D	C-R27-D-204	Water	6/9/2015 11:44:00 AM	6/9/2015	6/23/2015
N015932-008E	C-R27-D-204	Water	6/9/2015 11:44:00 AM	6/9/2015	6/23/2015
N015932-009A	C-R27-S-204	Water	6/9/2015 11:56:00 AM	6/9/2015	6/23/2015
N015932-009B	C-R27-S-204	Water	6/9/2015 11:56:00 AM	6/9/2015	6/23/2015
N015932-009C	C-R27-S-204	Water	6/9/2015 11:56:00 AM	6/9/2015	6/23/2015
N015932-009D	C-R27-S-204	Water	6/9/2015 11:56:00 AM	6/9/2015	6/23/2015
N015932-009E	C-R27-S-204	Water	6/9/2015 11:56:00 AM	6/9/2015	6/23/2015
N015932-010A	C-TAZ-D-204	Water	6/9/2015 9:14:00 AM	6/9/2015	6/23/2015
N015932-010B	C-TAZ-D-204	Water	6/9/2015 9:14:00 AM	6/9/2015	6/23/2015
N015932-010C	C-TAZ-D-204	Water	6/9/2015 9:14:00 AM	6/9/2015	6/23/2015
N015932-010D	C-TAZ-D-204	Water	6/9/2015 9:14:00 AM	6/9/2015	6/23/2015
N015932-010E	C-TAZ-D-204	Water	6/9/2015 9:14:00 AM	6/9/2015	6/23/2015
N015932-011A	C-TAZ-S-204	Water	6/9/2015 9:26:00 AM	6/9/2015	6/23/2015
N015932-011B	C-TAZ-S-204	Water	6/9/2015 9:26:00 AM	6/9/2015	6/23/2015
N015932-011C	C-TAZ-S-204	Water	6/9/2015 9:26:00 AM	6/9/2015	6/23/2015
N015932-011D	C-TAZ-S-204	Water	6/9/2015 9:26:00 AM	6/9/2015	6/23/2015
N015932-011E	C-TAZ-S-204	Water	6/9/2015 9:26:00 AM	6/9/2015	6/23/2015
N015932-012A	R-19-204	Water	6/9/2015 12:35:00 PM	6/9/2015	6/23/2015
N015932-012B	R-19-204	Water	6/9/2015 12:35:00 PM	6/9/2015	6/23/2015
N015932-012C	R-19-204	Water	6/9/2015 12:35:00 PM	6/9/2015	6/23/2015
N015932-012D	R-19-204	Water	6/9/2015 12:35:00 PM	6/9/2015	6/23/2015
N015932-012E	R-19-204	Water	6/9/2015 12:35:00 PM	6/9/2015	6/23/2015
N015932-013A	R-28-204	Water	6/9/2015 12:20:00 PM	6/9/2015	6/23/2015
N015932-013B	R-28-204	Water	6/9/2015 12:20:00 PM	6/9/2015	6/23/2015
N015932-013C	R-28-204	Water	6/9/2015 12:20:00 PM	6/9/2015	6/23/2015
N015932-013D	R-28-204	Water	6/9/2015 12:20:00 PM	6/9/2015	6/23/2015
N015932-013E	R-28-204	Water	6/9/2015 12:20:00 PM	6/9/2015	6/23/2015
N015932-014A	R63-204	Water	6/9/2015 10:26:00 AM	6/9/2015	6/23/2015
N015932-014B	R63-204	Water	6/9/2015 10:26:00 AM	6/9/2015	6/23/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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
Project: PG&E Topock, WW-PGE-2623, 658
Lab Order: N015932
Contract No: 2015-RMP-204

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015932-014C	R63-204	Water	6/9/2015 10:26:00 AM	6/9/2015	6/23/2015
N015932-014D	R63-204	Water	6/9/2015 10:26:00 AM	6/9/2015	6/23/2015
N015932-014E	R63-204	Water	6/9/2015 10:26:00 AM	6/9/2015	6/23/2015
N015932-015A	RMP-AB1-204	Water	6/9/2015 1:00:00 PM	6/9/2015	6/23/2015

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:30:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150610D**	QC Batch: **R100736**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:54:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150610D** QC Batch: **R100736** PrepDate Analyst: **LR**							
Specific Conductance	980	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150610D**	QC Batch: **R100736**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:48:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150610D**	QC Batch: **R100736**				PrepDate		Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150610D**	QC Batch: **R100736**				PrepDate		Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:44:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150610D**	QC Batch: **R100736**				PrepDate		Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:56:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150610D** QC Batch: **R100736** PrepDate Analyst: **LR**							
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:14:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150610D**	QC Batch: **R100736**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150610D**	QC Batch: **R100736**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:35:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150610D**	QC Batch: **R100736**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:20:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150610D**	QC Batch: **R100736**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150610D**	QC Batch: **R100736**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/10/2015 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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N015931-001A DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **100736**
Client ID: **ZZZZZZ** Batch ID: **R100736** TestNo: **EPA 120.1** Analysis Date: **6/10/2015** SeqNo: **2020265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6950.000	0.10						6930	0.288	10	

Sample ID **N015932-012D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **100736**
Client ID: **ZZZZZZ** Batch ID: **R100736** TestNo: **EPA 120.1** Analysis Date: **6/10/2015** SeqNo: **2020277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1009.000	0.10						1012	0.297	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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:30:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:54:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	26	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:48:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	26	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:44:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:56:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:14:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:35:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	7.0	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658
Lab ID: N015932-013

Client Sample ID: R-28-204
Collection Date: 6/9/2015 12:20:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	27	0.10	0.10	H	°C	1	6/10/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150610E**	QC Batch: **R100737**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/10/2015 04:30 PM
Temp. at time of pH Analysis	28	0.10	0.10	H	°C	1	6/10/2015 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		

CLIENT: CH2M HILL
Work Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N015932-001D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **100737**
Client ID: **ZZZZZZ** Batch ID: **R100737** TestNo: **SM4500-H+B** Analysis Date: **6/10/2015** SeqNo: **2020281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.260	0.10						8.250	0.121	10	H
Temp. at time of pH Analysis	27.000	0.10						26.90	0.371	10	H

Sample ID **N015932-013D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **100737**
Client ID: **ZZZZZZ** Batch ID: **R100737** TestNo: **SM4500-H+B** Analysis Date: **6/10/2015** SeqNo: **2020293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.190	0.10						8.260	0.851	10	H
Temp. at time of pH Analysis	27.500	0.10						27.20	1.10	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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:30:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:54:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:48:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:44:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:56:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:14:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:35:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615D**	QC Batch: **50673**			PrepDate	**6/15/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:20:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**				PrepDate	**6/15/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **MB-50673** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/15/2015** RunNo: **100789**
Client ID: **PBW** Batch ID: **50673** TestNo: **SM2540D** Analysis Date: **6/15/2015** SeqNo: **2022848**

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-50673** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/15/2015** RunNo: **100789**
Client ID: **LCSW** Batch ID: **50673** TestNo: **SM2540D** Analysis Date: **6/15/2015** SeqNo: **2022849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	976.000	10	1000	0	97.6	80	120				

Sample ID **N015932-001DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/15/2015** RunNo: **100789**
Client ID: **ZZZZZZ** Batch ID: **50673** TestNo: **SM2540D** Analysis Date: **6/15/2015** SeqNo: **2022851**

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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-50675	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	100790
Client ID:	PBW	Batch ID:	50675	TestNo:	SM2540D			Analysis Date:	6/15/2015	SeqNo:	2022861

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-50675	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	100790
Client ID:	LCSW	Batch ID:	50675	TestNo:	SM2540D			Analysis Date:	6/15/2015	SeqNo:	2022862

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	1070.000	10	1000	0	107	80	120				

Sample ID	N015944-001D DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	100790
Client ID:	ZZZZZZ	Batch ID:	50675	TestNo:	SM2540D			Analysis Date:	6/15/2015	SeqNo:	2022866

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:30:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150613A**	QC Batch: **R100883**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 03:04 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/12/2015 10:59 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:54:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150613A**	QC Batch: **R100883**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 03:14 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/12/2015 11:26 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150613A** QC Batch: **R100883**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 03:24 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150612A** QC Batch: **50637**				PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/12/2015 11:32 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-80-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:16:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150613A**	QC Batch: **R100883**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 05:11 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-81-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:10:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150613A**	QC Batch: **R100883**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 05:31 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:48:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150613A**	QC Batch: **R100883**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 06:11 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/12/2015 11:37 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150613A**	QC Batch: **R100883**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 06:30 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/12/2015 11:43 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:44:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150613A**	QC Batch: **R100883**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 06:50 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/12/2015 11:59 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:56:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_150613A** QC Batch: **R100883** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 07:10 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150612A** QC Batch: **50637** PrepDate **6/10/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/13/2015 12:05 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

ANALYTICAL RESULTS

Print Date: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:14:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_150613A**	QC Batch: **R100883**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/13/2015 07:30 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/13/2015 12:10 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150615B**	QC Batch: **R100879**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/15/2015 04:18 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/13/2015 12:16 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:35:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150615B** QC Batch: **R100879** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/15/2015 04:29 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150612A** QC Batch: **50637** PrepDate **6/10/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/13/2015 12:21 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:20:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150615B**	QC Batch: **R100879**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/15/2015 04:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate		**6/10/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/13/2015 12:27 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150615B** QC Batch: **R100879** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/15/2015 04:48 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150612A** QC Batch: **50637** PrepDate **6/10/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/13/2015 12:38 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB1-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 1:00:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150615B**	QC Batch: **R100879**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.25	0.015	0.20		µg/L	1	6/15/2015 04:57 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: *23-Jun-15*

CLIENT: CH2M HILL
Work Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100879** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **PBW** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026632**

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-R100879** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **LCSW** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.078	0.20	5.000	0	102	90	110				

Sample ID **N015932-015ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.220	0.20						0.2523	13.6	20	

Sample ID **N015932-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.164	0.20	1.000	0.1291	103	90	110				

Sample ID **N015932-011AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.198	0.20	1.000	0.1291	107	90	110	1.164	2.90	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		

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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015932-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026644**

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	0.1306	101	90	110				

Sample ID **N015932-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.179	0.20	1.000	0.1312	105	90	110				

Sample ID **N015932-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.168	0.20	1.000	0.1429	102	90	110				

Sample ID **N015932-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.238	0.20	1.000	0.2523	98.6	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R100883** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **LCSW** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.038	0.20	5.000	0	101	90	110				

Sample ID **MB-R100883** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **PBW** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026912**

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

Sample ID **N015945-001FDUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.323	0.20						5.250	1.39	20	

Sample ID **N015945-001F-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.340	0.20	5.000	5.250	102	90	110				

Sample ID **N015945-001F-MSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.536	0.20	5.000	5.250	106	90	110	10.34	1.88	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015932-001A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.08860	101	90	110				

Sample ID **N015932-002A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026925**

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	0.09120	106	90	110				

Sample ID **N015932-003A-MS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0.1035	99.0	90	110				

Sample ID **N015932-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.135	0.20	1.000	0.08800	105	90	110				

Sample ID **N015932-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.124	0.20	1.000	0.09910	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N015932-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100883
Client ID:	ZZZZZZ	Batch ID:	R100883	TestNo:	EPA 218.6			Analysis Date:	6/13/2015	SeqNo:	2026938

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	0.06970	107	90	110				

Sample ID	N015932-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100883
Client ID:	ZZZZZZ	Batch ID:	R100883	TestNo:	EPA 218.6			Analysis Date:	6/13/2015	SeqNo:	2026940

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.160	0.20	1.000	0.1095	105	90	110				

Sample ID	N015932-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	100883
Client ID:	ZZZZZZ	Batch ID:	R100883	TestNo:	EPA 218.6			Analysis Date:	6/13/2015	SeqNo:	2026942

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.137	0.20	1.000	0.07820	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **MB-R100879** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **PBW** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026708**

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-R100879** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **LCSW** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.078	0.20	5.000	0	102	90	110				

Sample ID **N015932-015ADUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.220	0.20						0.2523	13.6	20	

Sample ID **N015932-011AMS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026718**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.164	0.20	1.000	0.1291	103	90	110				

Sample ID **N015932-011AMSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.198	0.20	1.000	0.1291	107	90	110	1.164	2.90	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		

CLIENT: CH2M HILL
Work Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **N015932-015AMS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100879**
Client ID: **ZZZZZZ** Batch ID: **R100879** TestNo: **EPA 218.6** Analysis Date: **6/15/2015** SeqNo: **2026723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.238	0.20	1.000	0.2523	98.6	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **LCS-R100883** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **LCSW** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.038	0.20	5.000	0	101	90	110				

Sample ID **MB-R100883** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **PBW** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026952**

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

Sample ID **N015945-001FDUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.323	0.20						5.250	1.39	20	

Sample ID **N015945-001F-MS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.340	0.20	5.000	5.250	102	90	110				

Sample ID **N015945-001F-MSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100883**
Client ID: **ZZZZZZ** Batch ID: **R100883** TestNo: **EPA 218.6** Analysis Date: **6/13/2015** SeqNo: **2026963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.536	0.20	5.000	5.250	106	90	110	10.34	1.88	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N015932-004AMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100883
Client ID:	ZZZZZZ	Batch ID:	R100883	TestNo:	EPA 218.6			Analysis Date:	6/13/2015	SeqNo:	2026968

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	0.1278	97.9	90	110				

Sample ID	N015932-005AMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	100883
Client ID:	ZZZZZZ	Batch ID:	R100883	TestNo:	EPA 218.6			Analysis Date:	6/13/2015	SeqNo:	2026970

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.134	0.20	1.000	0.1084	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-50637	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/10/2015	RunNo:	100762
Client ID:	PBW	Batch ID:	50637	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021505

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

Sample ID	LCS-50637	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/10/2015	RunNo:	100762
Client ID:	LCSW	Batch ID:	50637	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.587	1.0	10.00	0	95.9	85	115				

Sample ID	N015932-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/10/2015	RunNo:	100762
Client ID:	ZZZZZZ	Batch ID:	50637	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021512

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.255	1.0	10.00	0	92.6	75	125				

Sample ID	N015932-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/10/2015	RunNo:	100762
Client ID:	ZZZZZZ	Batch ID:	50637	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021513

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.151	1.0	10.00	0	91.5	75	125	9.255	1.13	20	

Sample ID	N015932-013C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/10/2015	RunNo:	100762
Client ID:	ZZZZZZ	Batch ID:	50637	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/13/2015	SeqNo:	2021526

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.413	1.0	10.00	0	94.1	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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:30:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:54:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.37	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:48:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:44:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:56:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:14:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:35:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:20:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.37	0.022	0.050		mg/L	1	6/23/2015

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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150623B** QC Batch: **R100917** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	6/23/2015

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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100917** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100917**
Client ID: **PBW** Batch ID: **R100917** TestNo: **SM4500-NO3** Analysis Date: **6/23/2015** SeqNo: **2028140**

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-R100917** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100917**
Client ID: **LCSW** Batch ID: **R100917** TestNo: **SM4500-NO3** Analysis Date: **6/23/2015** SeqNo: **2028141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	85	115				

Sample ID **N015932-003EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100917**
Client ID: **ZZZZZZ** Batch ID: **R100917** TestNo: **SM4500-NO3** Analysis Date: **6/23/2015** SeqNo: **2028143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.369	0.050						0.3666	0.680	20	

Sample ID **N015932-003EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100917**
Client ID: **ZZZZZZ** Batch ID: **R100917** TestNo: **SM4500-NO3** Analysis Date: **6/23/2015** SeqNo: **2028144**

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	0.5000	0.3666	115	75	125				

Sample ID **N015932-003EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100917**
Client ID: **ZZZZZZ** Batch ID: **R100917** TestNo: **SM4500-NO3** Analysis Date: **6/23/2015** SeqNo: **2028145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.941	0.050	0.5000	0.3666	115	75	125	0.9426	0.223	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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:30:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 04:10 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 02:20 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: *23-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658
Lab ID: N015932-002

Client Sample ID: C-I-3-D-204
Collection Date: 6/9/2015 9:54:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:00 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 02:53 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:04 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 02:58 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:48:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:09 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 03:03 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:14 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 03:08 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:44:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:24 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	21	17	20		ug/L	1	6/12/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:56:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:29 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:14:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:42 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 03:31 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: *23-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658
Lab ID: N015932-011

Client Sample ID: C-TAZ-S-204
Collection Date: 6/9/2015 9:26:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:47 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 03:36 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:35:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 05:56 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	29	17	20		ug/L	1	6/12/2015 03:41 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:20:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 06:01 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	23	17	20		ug/L	1	6/12/2015 03:46 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: *23-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658
Lab ID: N015932-014

Client Sample ID: R63-204
Collection Date: 6/9/2015 10:26:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50641**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 06:11 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50640**				PrepDate	**6/10/2015**	Analyst: **CEI**
Iron	39	17	20		ug/L	1	6/12/2015 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		

ASSET Laboratories

Date: *23-Jun-15*

CLIENT: CH2M HILL
Work Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-50641** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/10/2015** RunNo: **100760**
Client ID: **PBW** Batch ID: **50641** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021109**

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

Sample ID **N015932-001C-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/10/2015** RunNo: **100760**
Client ID: **ZZZZZZ** Batch ID: **50641** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	115.790	20	100.0	0	116	75	125				

Sample ID **N015932-001C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/10/2015** RunNo: **100760**
Client ID: **ZZZZZZ** Batch ID: **50641** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	101.012	20	100.0	0	101	75	125	115.8	13.6	20	

Sample ID **LCS-50641** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/10/2015** RunNo: **100760**
Client ID: **LCSW** Batch ID: **50641** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	101.258	20	100.0	0	101	85	115				

Sample ID **N015932-013C-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/10/2015** RunNo: **100760**
Client ID: **ZZZZZZ** Batch ID: **50641** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.548	20	100.0	0	108	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-50640	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	6/10/2015	RunNo:	100760
Client ID:	PBW	Batch ID:	50640	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021199

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

Sample ID	LCS-50640	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	6/10/2015	RunNo:	100760
Client ID:	LCSW	Batch ID:	50640	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.828	20	100.0	0	103	85	115				

Sample ID	N015932-001B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	6/10/2015	RunNo:	100760
Client ID:	ZZZZZZ	Batch ID:	50640	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021206

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.004	20	100.0	0	116	75	125				

Sample ID	N015932-001B-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	6/10/2015	RunNo:	100760
Client ID:	ZZZZZZ	Batch ID:	50640	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	130.284	20	100.0	0	130	75	125	116.0	11.6	20	S

Sample ID	N015932-013B-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	6/10/2015	RunNo:	100760
Client ID:	ZZZZZZ	Batch ID:	50640	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	142.600	20	100.0	22.70	120	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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-BNS-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:30:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/12/2015 10:59 PM
Barium	140	0.36	5.0		µg/L	5	6/12/2015 11:04 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 04:08 PM
Molybdenum	4.8	0.029	0.50		µg/L	1	6/12/2015 10:59 PM
Selenium	1.4	0.070	0.50		µg/L	1	6/15/2015 04:08 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:54:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/12/2015 11:26 PM
Barium	130	0.072	1.0		µg/L	1	6/12/2015 11:26 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 04:36 PM
Molybdenum	5.0	0.029	0.50		µg/L	1	6/12/2015 11:26 PM
Selenium	1.4	0.070	0.50		µg/L	1	6/12/2015 11:26 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-I-3-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.3	0.016	0.10		µg/L	1	6/12/2015 11:32 PM
Barium	130	0.072	1.0		µg/L	1	6/12/2015 11:32 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 04:41 PM
Molybdenum	4.8	0.029	0.50		µg/L	1	6/12/2015 11:32 PM
Selenium	1.4	0.070	0.50		µg/L	1	6/12/2015 11:32 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:48:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.2	0.016	0.10		µg/L	1	6/12/2015 11:37 PM
Barium	120	0.072	1.0		µg/L	1	6/12/2015 11:37 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 04:47 PM
Molybdenum	4.6	0.029	0.50		µg/L	1	6/12/2015 11:37 PM
Selenium	1.4	0.070	0.50		µg/L	1	6/12/2015 11:37 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:02:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/12/2015 11:43 PM
Barium	130	0.072	1.0		µg/L	1	6/12/2015 11:43 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 05:03 PM
Molybdenum	5.0	0.029	0.50		µg/L	1	6/12/2015 11:43 PM
Selenium	1.6	0.070	0.50		µg/L	1	6/12/2015 11:43 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:44:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/12/2015 11:59 PM
Barium	130	0.072	1.0		µg/L	1	6/12/2015 11:59 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 05:08 PM
Molybdenum	4.9	0.029	0.50		µg/L	1	6/12/2015 11:59 PM
Selenium	1.4	0.070	0.50		µg/L	1	6/12/2015 11:59 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 11:56:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.5	0.016	0.10		µg/L	1	6/13/2015 12:05 AM
Barium	130	0.072	1.0		µg/L	1	6/13/2015 12:05 AM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 05:56 PM
Molybdenum	5.1	0.029	0.50		µg/L	1	6/13/2015 12:05 AM
Selenium	1.6	0.070	0.50		µg/L	1	6/15/2015 05:56 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:14:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/13/2015 12:10 AM
Barium	130	0.072	1.0		µg/L	1	6/13/2015 12:10 AM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 05:20 PM
Molybdenum	4.8	0.029	0.50		µg/L	1	6/13/2015 12:10 AM
Selenium	1.6	0.070	0.50		µg/L	1	6/13/2015 12:10 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-S-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 9:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/13/2015 12:16 AM
Barium	130	0.072	1.0		µg/L	1	6/13/2015 12:16 AM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 05:25 PM
Molybdenum	4.9	0.029	0.50		µg/L	1	6/13/2015 12:16 AM
Selenium	1.7	0.070	0.50		µg/L	1	6/15/2015 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-19-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:35:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.3	0.016	0.10		µg/L	1	6/13/2015 12:21 AM
Barium	130	0.072	1.0		µg/L	1	6/13/2015 12:21 AM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 05:31 PM
Molybdenum	4.7	0.029	0.50		µg/L	1	6/13/2015 12:21 AM
Selenium	1.2	0.070	0.50		µg/L	1	6/13/2015 12:21 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R-28-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 12:20:00 PM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/13/2015 12:27 AM
Barium	140	0.36	5.0		µg/L	5	6/17/2015 05:24 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 05:36 PM
Molybdenum	5.0	0.029	0.50		µg/L	1	6/13/2015 12:27 AM
Selenium	1.5	0.070	0.50		µg/L	1	6/13/2015 12:27 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: *23-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-204
Lab Order:	N015932	**Collection Date:**	6/9/2015 10:26:00 AM
Project:	PG&E Topock, WW-PGE-2623, 658	**Matrix:**	WATER
Lab ID:	N015932-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150612A**	QC Batch: **50637**			PrepDate	**6/10/2015**		Analyst: **CEI**
Arsenic	2.3	0.016	0.10		µg/L	1	6/13/2015 12:38 AM
Barium	130	0.072	1.0		µg/L	1	6/13/2015 12:38 AM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 05:52 PM
Molybdenum	4.9	0.029	0.50		µg/L	1	6/13/2015 12:38 AM
Selenium	1.3	0.070	0.50		µg/L	1	6/13/2015 12:38 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

Date: *23-Jun-15*

CLIENT: CH2M HILL
Work Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50637** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100762**
Client ID: **PBW** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021464**

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									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-50637** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100762**
Client ID: **LCSW** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.698	0.10	10.00	0	97.0	85	115				
Barium	104.175	1.0	100.0	0	104	85	115				
Molybdenum	10.131	0.50	10.00	0	101	85	115				
Selenium	8.918	0.50	10.00	0	89.2	85	115				

Sample ID **N015932-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100762**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.314	0.10	10.00	2.375	99.4	75	125				
Molybdenum	16.556	0.50	10.00	4.837	117	75	125				

Sample ID **N015932-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100762**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.322	0.10	10.00	2.375	99.5	75	125	12.31	0.0671	20	
Molybdenum	16.563	0.50	10.00	4.837	117	75	125	16.56	0.0399	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015932-013C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100762**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/13/2015** SeqNo: **2021485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.267	0.10	10.00	2.404	98.6	75	125				
Molybdenum	16.167	0.50	10.00	4.993	112	75	125				
Selenium	10.589	0.50	10.00	1.506	90.8	75	125				

Sample ID **MB-50637** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100772**
Client ID: **PBW** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2022542**

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

Sample ID **LCS-50637** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100772**
Client ID: **LCSW** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2022545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	103.724	0.50	100.0	0	104	85	115				

Sample ID **N015932-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100772**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2022549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.299	0.50	100.0	0	94.3	75	125				
Selenium	10.763	0.50	10.00	1.352	94.1	75	125				

Sample ID **N015932-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100772**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2022550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.046	0.50	100.0	0	94.0	75	125	94.30	0.269	20	
Selenium	10.217	0.50	10.00	1.352	88.6	75	125	10.76	5.21	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015932-013C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100772**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2022563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.025	0.50	100.0	0	97.0	75	125				

Sample ID **N015932-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100831**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/17/2015** SeqNo: **2024472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	258.028	5.0	100.0	137.4	121	75	125				

Sample ID **N015932-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100831**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/17/2015** SeqNo: **2024473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	259.134	5.0	100.0	137.4	122	75	125	258.0	0.428	20	

Sample ID **N015932-013C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/10/2015** RunNo: **100831**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/17/2015** SeqNo: **2024475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	241.205	5.0	100.0	141.4	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		

CH2MHILL

CHAIN OF CUSTODY RECORD

6/9/2015 2:13:15 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number WW-PGE-2623, 658
Task Order
Project 2015-RMP-204
Turnaround Time 10 Days
Shipping Date: 6/9/2015
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	HNO3, 4°C	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/SW6020A(s) 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-BNS-D-204	6/9/2015	11:30	Water	X		X	X	X	X	X	X	X	N015932 -01	9	
C-I-3-D-204	6/9/2015	9:54	Water	X		X	X	X	X	X	X	X	-02	9	
C-I-3-S-204	6/9/2015	10:02	Water	X		X	X	X	X	X	X	X	-03	9	
C-MW-80-204	6/9/2015	10:16	Water		X								-04	1	
C-MW-81-204	6/9/2015	12:10	Water		X								-05	1	
C-R22A-D-204	6/9/2015	10:48	Water	X		X	X	X	X	X	X	X	-06	9	
C-R22A-S-204	6/9/2015	11:02	Water	X		X	X	X	X	X	X	X	-07	9	
C-R27-D-204	6/9/2015	11:44	Water	X		X	X	X	X	X	X	X	-08	9	
C-R27-S-204	6/9/2015	11:56	Water	X		X	X	X	X	X	X	X	-09	9	
C-TAZ-D-204	6/9/2015	9:14	Water	X		X	X	X	X	X	X	X	-10	9	
C-TAZ-S-204	6/9/2015	9:26	Water	X		X	X	X	X	X	X	X	-11	9	
R-19-204	6/9/2015	12:35	Water	X		X	X	X	X	X	X	X	-12	9	
R-28-204	6/9/2015	12:20	Water	X		X	X	X	X	X	X	X	-13	9	

Signatures	Date/Time
Approved by	6-9-15
Sampled by	1545
Relinquished by	
Received by	6/9/15@1545
Relinquished by	6/9/15@1803
Received by	

Shipping Details

Method of Shipment: courier
On Ice: yes / no 2.8, 2.1, 3.7°C
Airbill No: ICE IRH1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
June 10-11, 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** *6/9/2015 2:13:16 PM* Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number WW-PGE-2623, 658
Task Order
Project 2015-RMP-204
Turnaround Time 10 Days
Shipping Date: 6/9/2015
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	HNO3, 4°C	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
R63-204	6/9/2015	10:26	Water	X		X	X	X	X	X	X	X	N015932 - 14	9	
RMP-AB1-204	6/9/2015	13:00	Water		X								-15	1	
													TOTAL NUMBER OF CONTAINERS	111	

	Signatures	Date/Time
Approved by		6-9-15
Sampled by		1545
Relinquished by		
Received by		6/9/15@1545
Relinquished by		
Received by		6/9/15@1803

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 2.8, 2.6, 3.7°C
Airbill No: ICE Batt#1
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
June 10-11, 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:	6/9/2015	Workorder:	N015932
Rep sample Temp (Deg C):	2.8,2.1,3.7	IR Gun ID:	1
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	None	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 B MBC for jsg 06/11/15

Reviewed By: gsg 06/15/15

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 **N015932-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4503-1.1.4501)*1000000}{100}$$
$$= 2 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 6/19/2015

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

	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: 6/15/15						
MB-50673	100	1.4231	1.4230	-1.0000	1.00	-1
LCS-50673	100	1.4179	1.5155	976.0000	1.00	976
N015932-001D	100	1.4501	1.4503	2.0000	1.00	2
N015932-001D DUP	100	1.4259	1.4262	3.0000	1.00	3
N015932-002D	100	1.4257	1.426	3.0000	1.00	3
N015932-003D	100	1.4377	1.4378	1.0000	1.00	1
N015932-006D	100	1.4433	1.4434	1.0000	1.00	1
N015932-007D	100	1.4374	1.4376	2.0000	1.00	2
N015932-008D	100	1.4438	1.4439	1.0000	1.00	1
N015932-009D	100	1.4305	1.4306	1.0000	1.00	1
N015932-010D	100	1.439	1.4391	1.0000	1.00	1
N015932-011D	100	1.4512	1.4516	4.0000	1.00	4
N015932-012D	100	1.4403	1.4408	5.0000	1.00	5

Julia Ramit 6/19/2015

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

	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: 6/15/15						
MB-50675	100	1.4165	1.4165	0.0000	1.00	0
LCS-50675	100	1.4235	1.5305	1070.0000	1.00	1070
N015932-013D	100	1.4416	1.4417	1.0000	1.00	1
N015932-014D	100	1.4438	1.444	2.0000	1.00	2
N015944-001D	100	1.4416	1.4419	3.0000	1.00	3
N015944-001D DUP	100	1.4245	1.4249	4.0000	1.00	4
N015944-002D	100	1.4379	1.438	1.0000	1.00	1
N015944-003D	100	1.4496	1.4549	53.0000	1.00	53
N015944-006D	100	1.4404	1.4406	2.0000	1.00	2
N015944-007D	100	1.4474	1.4475	1.0000	1.00	1
N015944-008D	100	1.4437	1.4438	1.0000	1.00	1
N015944-009D	100	1.4307	1.4308	1.0000	1.00	1
N015944-010D	100	1.4233	1.4235	2.0000	1.00	2

Julia Ramit 6/19/2015

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 **N015932-011A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.1291 * 1

= 0.1291

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 **N015932-015A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.2523 * 1

= 0.2523

Reporting result in two significant figures ,

Cr^{+6}, µg/L = 0.25

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 **N015932-003E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.3666 * 1

= 0.3666 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.37 mg/L

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 **N015932-001C**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0 * 1 * (25/25) * 1000

= 0

But since PQL of Iron is 20 ug/L,

Iron, ug/L = ND

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015932
Test Method: EPA 6010
Analysis Date: 06/12/15

Matrix: Water
Batch No.: 50641

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

Comments:

Analyzed By: Claire E. Ignacio

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

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015932-001C-DT 5X	Iron	µg/L	0	NA	0		10

Note: NA - Not Applicable

ASSET Laboratories

Date: *14-Jun-15*

CLIENT: CH2M HILL
Work Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID:	**N015932-001C-PS**	SampType:	**PS**	TestCode:	**6010_WDPGE**	Units:	**ug/L**	Prep Date:			RunNo:	**100760**	
Client ID:	**ZZZZZZ**	Batch ID:	**50641**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**6/12/2015**		SeqNo:	**2021118**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.505	20	100.0	0	119	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: EPA6010
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 **N015932-008B**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.02060287122 * 1 * (25/25) * 1000

= 20.60287122

Reporting results in two significant figures,

Iron, ug/L = 21

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015932
Test Method: EPA 6010
Analysis Date: 06/12/15

Matrix: Water
Batch No.: 50640

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

Comments:

Analyzed By: Claire E. Ignacio

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

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015932-001B-DT 5X	Iron	µg/L	0	NA	0	0.00%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *14-Jun-15*

CLIENT: CH2M HILL
Work Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID:	**N015932-001B-PS**	SampType:	**PS**	TestCode:	**6010_WPGEP**	Units:	**ug/L**	Prep Date:			RunNo:	**100760**
Client ID:	**ZZZZZZ**	Batch ID:	**50640**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**6/12/2015**		SeqNo:	**2021205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.180	20	100.0	0	116	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 **N015932-001C,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 2.37485925595879 * 1 * (25/25)

= 2.37485925595879

Reporting results in two significant figures,

Arsenic, ug/L = 2.4

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015932
Test Method: EPA 6020
Analysis Date: 6/12/2015

Matrix: Water
Batch No.: 50637

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Mo. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015932-001C-DT 5X	Arsenic	µg/L	2.606334254	PASS	2.374859256	9.75%	10
N015932-001C-DT 5X	Chromium	µg/L	0	NA	0		10
N015932-001C-DT 5X	Molybdenum	µg/L	5.130872059	NA	4.836921354	6.08%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015932
Test Method: EPA 6020
Analysis Date: 6/15/2015

Matrix: Water
Batch No.: 50637

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn and Se. The calculated concentrations are < 25X RL's.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015932-001C-DT 5X	Manganese	µg/L	0	NA	0		10
N015932-001C-DT 5X	Selenium	µg/L	2.054369371	NA	1.352431531	51.90%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015932
Test Method: EPA 6020
Analysis Date: 6/17/2015

Matrix: Water
Batch No.: 50637

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

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015932-001C-DT 25X	Barium	µg/L	146.5543713	PASS	137.4221617	6.65%	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015932-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100762**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.231	0.10	10.00	2.375	98.6	80	120				
Molybdenum	15.947	0.50	10.00	4.837	111	80	120				

Sample ID **N015932-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100772**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2022548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	95.709	0.50	100.0	0	95.7	80	120				
Selenium	10.360	0.50	10.00	1.352	90.1	80	120				

Sample ID **N015932-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100831**
Client ID: **ZZZZZZ** Batch ID: **50637** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/17/2015** SeqNo: **2024471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	250.519	5.0	100.0	137.4	113	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: N015932
Project: PG&E Topock, WW-PGE-2623, 658

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N015932-001C-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	100762
Client ID:	ZZZZZZ	Batch ID:	50637	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/12/2015	SeqNo:	2021511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.245	1.0	10.00	0	92.4	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		

June 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.: N015944

RE: PG&E Topock, 658017.01.04.02

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on June 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.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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,

Nancy Liburcao for

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, 658017.01.04.02
Lab Order: N015944

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 6020_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Chromium on QC sample N016075-007B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (1.2 ug/L) and hexavalent chromium (0.12 ug/L) for sample N015944-006 (C-NR1-D-204) 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 0 and 0.12 ug/L, respectively. Thus,the redigested result was reported.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

Date: *26-Jun-15*

CLIENT: CH2M HILL
Project: PG&E Topock, 658017.01.04.02
Lab Order: N015944
Contract No: 2015-RMP-204

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015944-001A	C-CON-D-204	Water	6/10/2015 9:06:00 AM	6/10/2015	6/29/2015
N015944-001B	C-CON-D-204	Water	6/10/2015 9:06:00 AM	6/10/2015	6/29/2015
N015944-001C	C-CON-D-204	Water	6/10/2015 9:06:00 AM	6/10/2015	6/29/2015
N015944-001D	C-CON-D-204	Water	6/10/2015 9:06:00 AM	6/10/2015	6/29/2015
N015944-001E	C-CON-D-204	Water	6/10/2015 9:06:00 AM	6/10/2015	6/29/2015
N015944-002A	C-CON-S-204	Water	6/10/2015 9:16:00 AM	6/10/2015	6/29/2015
N015944-002B	C-CON-S-204	Water	6/10/2015 9:16:00 AM	6/10/2015	6/29/2015
N015944-002C	C-CON-S-204	Water	6/10/2015 9:16:00 AM	6/10/2015	6/29/2015
N015944-002D	C-CON-S-204	Water	6/10/2015 9:16:00 AM	6/10/2015	6/29/2015
N015944-002E	C-CON-S-204	Water	6/10/2015 9:16:00 AM	6/10/2015	6/29/2015
N015944-003A	C-MAR-S-204	Water	6/10/2015 11:56:00 AM	6/10/2015	6/29/2015
N015944-003B	C-MAR-S-204	Water	6/10/2015 11:56:00 AM	6/10/2015	6/29/2015
N015944-003C	C-MAR-S-204	Water	6/10/2015 11:56:00 AM	6/10/2015	6/29/2015
N015944-003D	C-MAR-S-204	Water	6/10/2015 11:56:00 AM	6/10/2015	6/29/2015
N015944-003E	C-MAR-S-204	Water	6/10/2015 11:56:00 AM	6/10/2015	6/29/2015
N015944-004A	C-MW-82-204	Water	6/10/2015 8:20:00 AM	6/10/2015	6/29/2015
N015944-005A	C-MW-83-204	Water	6/10/2015 11:48:00 AM	6/10/2015	6/29/2015
N015944-006A	C-NR1-D-204	Water	6/10/2015 9:38:00 AM	6/10/2015	6/29/2015
N015944-006B	C-NR1-D-204	Water	6/10/2015 9:38:00 AM	6/10/2015	6/29/2015
N015944-006C	C-NR1-D-204	Water	6/10/2015 9:38:00 AM	6/10/2015	6/29/2015
N015944-006D	C-NR1-D-204	Water	6/10/2015 9:38:00 AM	6/10/2015	6/29/2015
N015944-006E	C-NR1-D-204	Water	6/10/2015 9:38:00 AM	6/10/2015	6/29/2015
N015944-007A	C-NR1-S-204	Water	6/10/2015 9:52:00 AM	6/10/2015	6/29/2015
N015944-007B	C-NR1-S-204	Water	6/10/2015 9:52:00 AM	6/10/2015	6/29/2015
N015944-007C	C-NR1-S-204	Water	6/10/2015 9:52:00 AM	6/10/2015	6/29/2015
N015944-007D	C-NR1-S-204	Water	6/10/2015 9:52:00 AM	6/10/2015	6/29/2015
N015944-007E	C-NR1-S-204	Water	6/10/2015 9:52:00 AM	6/10/2015	6/29/2015
N015944-008A	C-NR3-D-204	Water	6/10/2015 10:18:00 AM	6/10/2015	6/29/2015
N015944-008B	C-NR3-D-204	Water	6/10/2015 10:18:00 AM	6/10/2015	6/29/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: CH2M HILL
Project: PG&E Topock, 658017.01.04.02
Lab Order: N015944
Contract No: 2015-RMP-204

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N015944-008C	C-NR3-D-204	Water	6/10/2015 10:18:00 AM	6/10/2015	6/29/2015
N015944-008D	C-NR3-D-204	Water	6/10/2015 10:18:00 AM	6/10/2015	6/29/2015
N015944-008E	C-NR3-D-204	Water	6/10/2015 10:18:00 AM	6/10/2015	6/29/2015
N015944-009A	C-NR3-S-204	Water	6/10/2015 10:30:00 AM	6/10/2015	6/29/2015
N015944-009B	C-NR3-S-204	Water	6/10/2015 10:30:00 AM	6/10/2015	6/29/2015
N015944-009C	C-NR3-S-204	Water	6/10/2015 10:30:00 AM	6/10/2015	6/29/2015
N015944-009D	C-NR3-S-204	Water	6/10/2015 10:30:00 AM	6/10/2015	6/29/2015
N015944-009E	C-NR3-S-204	Water	6/10/2015 10:30:00 AM	6/10/2015	6/29/2015
N015944-010A	C-NR4-D-204	Water	6/10/2015 10:52:00 AM	6/10/2015	6/29/2015
N015944-010B	C-NR4-D-204	Water	6/10/2015 10:52:00 AM	6/10/2015	6/29/2015
N015944-010C	C-NR4-D-204	Water	6/10/2015 10:52:00 AM	6/10/2015	6/29/2015
N015944-010D	C-NR4-D-204	Water	6/10/2015 10:52:00 AM	6/10/2015	6/29/2015
N015944-010E	C-NR4-D-204	Water	6/10/2015 10:52:00 AM	6/10/2015	6/29/2015
N015944-011A	C-NR4-S-204	Water	6/10/2015 11:10:00 AM	6/10/2015	6/29/2015
N015944-011B	C-NR4-S-204	Water	6/10/2015 11:10:00 AM	6/10/2015	6/29/2015
N015944-011C	C-NR4-S-204	Water	6/10/2015 11:10:00 AM	6/10/2015	6/29/2015
N015944-011D	C-NR4-S-204	Water	6/10/2015 11:10:00 AM	6/10/2015	6/29/2015
N015944-011E	C-NR4-S-204	Water	6/10/2015 11:10:00 AM	6/10/2015	6/29/2015
N015944-012A	RMP-AB2-204	Water	6/10/2015 12:30:00 PM	6/10/2015	6/29/2015
N015944-013A	RRB-204	Water	6/10/2015 8:30:00 AM	6/10/2015	6/29/2015
N015944-013B	RRB-204	Water	6/10/2015 8:30:00 AM	6/10/2015	6/29/2015
N015944-013C	RRB-204	Water	6/10/2015 8:30:00 AM	6/10/2015	6/29/2015
N015944-013D	RRB-204	Water	6/10/2015 8:30:00 AM	6/10/2015	6/29/2015
N015944-013E	RRB-204	Water	6/10/2015 8:30:00 AM	6/10/2015	6/29/2015
N015944-014A	SW1-204	Water	6/10/2015 6:38:00 AM	6/10/2015	6/29/2015
N015944-014B	SW1-204	Water	6/10/2015 6:38:00 AM	6/10/2015	6/29/2015
N015944-014C	SW1-204	Water	6/10/2015 6:38:00 AM	6/10/2015	6/29/2015
N015944-015A	SW2-204	Water	6/10/2015 6:44:00 AM	6/10/2015	6/29/2015
N015944-015B	SW2-204	Water	6/10/2015 6:44:00 AM	6/10/2015	6/29/2015
N015944-015C	SW2-204	Water	6/10/2015 6:44:00 AM	6/10/2015	6/29/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:06:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:16:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:56:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **WETCHEM_150611A**	QC Batch: **R100749**				PrepDate		Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	6/11/2015 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:18:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:10:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 8:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 6:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 6:44:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_150611A**	QC Batch: **R100749**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	6/11/2015 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		

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N015944-013D DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **100749**
Client ID: **ZZZZZZ** Batch ID: **R100749** TestNo: **EPA 120.1** Analysis Date: **6/11/2015** SeqNo: **2020753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1027.000	0.10						1024	0.293	10	

Sample ID **N015944-014C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **100749**
Client ID: **ZZZZZZ** Batch ID: **R100749** TestNo: **EPA 120.1** Analysis Date: **6/11/2015** SeqNo: **2020755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1043.000	0.10						1037	0.577	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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:06:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:16:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:56:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	7.8	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	6/11/2015 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:18:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	6.8	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/11/2015 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:10:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.1	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 8:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 6:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	6/11/2015 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 6:44:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_150611B**	QC Batch: **R100750**			PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	6/11/2015 04:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	6/11/2015 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N015944-013D DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **100750**
Client ID: **ZZZZZZ** Batch ID: **R100750** TestNo: **SM4500-H+B** Analysis Date: **6/11/2015** SeqNo: **2020768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.050	0.10						8.040	0.124	10	H
Temp. at time of pH Analysis	25.100	0.10						25.20	0.398	10	H

Sample ID **N015944-014C DUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **100750**
Client ID: **ZZZZZZ** Batch ID: **R100750** TestNo: **SM4500-H+B** Analysis Date: **6/11/2015** SeqNo: **2020770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.560	0.10						7.530	0.398	10	H
Temp. at time of pH Analysis	24.500	0.10						24.50	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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:06:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**			PrepDate	**6/15/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:16:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **WETCHEM_150615E** QC Batch: **50675** PrepDate **6/15/2015** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:56:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**			PrepDate	**6/15/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	53	10	10		mg/L	1	6/15/2015 08:30 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**			PrepDate	**6/15/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**			PrepDate	**6/15/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:18:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**			PrepDate	**6/15/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**			PrepDate	**6/15/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150615E**	QC Batch: **50675**			PrepDate	**6/15/2015**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/15/2015 08:30 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:10:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150616H**	QC Batch: **50691**				PrepDate	**6/16/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/16/2015 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 8:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150616H**	QC Batch: **50691**				PrepDate	**6/16/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	15	10	10		mg/L	1	6/16/2015 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		

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **MB-50675** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/15/2015** RunNo: **100790**
Client ID: **PBW** Batch ID: **50675** TestNo: **SM2540D** Analysis Date: **6/15/2015** SeqNo: **2022861**

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-50675** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/15/2015** RunNo: **100790**
Client ID: **LCSW** Batch ID: **50675** TestNo: **SM2540D** Analysis Date: **6/15/2015** SeqNo: **2022862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	1070.000	10	1000	0	107	80	120				

Sample ID **N015944-001D DUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/15/2015** RunNo: **100790**
Client ID: **ZZZZZZ** Batch ID: **50675** TestNo: **SM2540D** Analysis Date: **6/15/2015** SeqNo: **2022866**

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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	MB-50691	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	6/16/2015	RunNo:	100852
Client ID:	PBW	Batch ID:	50691	TestNo:	SM2540D			Analysis Date:	6/16/2015	SeqNo:	2025205

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-50691	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	6/16/2015	RunNo:	100852
Client ID:	LCSW	Batch ID:	50691	TestNo:	SM2540D			Analysis Date:	6/16/2015	SeqNo:	2025206

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	928.000	10	1000	0	92.8	80	120				

Sample ID	N015948-003ADUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	6/16/2015	RunNo:	100852
Client ID:	ZZZZZZ	Batch ID:	50691	TestNo:	SM2540D			Analysis Date:	6/16/2015	SeqNo:	2025210

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	138.000	20						132.0	4.44	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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:06:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A** QC Batch: **R100880** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 10:25 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150615B** QC Batch: **50663** PrepDate **6/12/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/15/2015 11:03 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:16:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150617A**	QC Batch: **R100880**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 10:44 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate		**6/12/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/15/2015 11:09 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:56:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A** QC Batch: **R100880** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 11:22 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150615B** QC Batch: **50663** PrepDate **6/12/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/15/2015 11:37 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-82-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 8:20:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A**	QC Batch: **R100880**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.26	0.015	0.20		µg/L	1	6/17/2015 11:41 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-83-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:48:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150617A**	QC Batch: **R100880**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A** QC Batch: **R100880**				PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 12:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150624A** QC Batch: **50744**				PrepDate		**6/24/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/24/2015 09:12 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A** QC Batch: **R100880** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 12:38 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150615B** QC Batch: **50663** PrepDate **6/12/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/15/2015 11:59 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:18:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A** QC Batch: **R100880** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 01:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150615B** QC Batch: **50663** PrepDate **6/12/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/16/2015 12:04 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150617A**	QC Batch: **R100880**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 01:35 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate		**6/12/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/16/2015 12:10 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A** QC Batch: **R100880** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 01:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150615B** QC Batch: **50663** PrepDate **6/12/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/16/2015 12:16 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:10:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A** QC Batch: **R100880** PrepDate							Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 02:12 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_150615B** QC Batch: **50663** PrepDate **6/12/2015**							Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/16/2015 12:21 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB2-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 12:30:00 PM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC7_150617A**	QC Batch: **R100880**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.53	0.015	0.20		µg/L	1	6/17/2015 02:31 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 8:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150617A**	QC Batch: **R100880**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 03:46 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate		**6/12/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/16/2015 12:27 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
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 6:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150617A**	QC Batch: **R100880**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 04:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate		**6/12/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/16/2015 12:32 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 6:44:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_150617A**	QC Batch: **R100880**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	6/17/2015 04:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate		**6/12/2015**	Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	6/16/2015 12:38 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

Date: *26-Jun-15*

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R100880** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **PBW** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026658**

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-R100880** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **LCSW** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.959	0.20	5.000	0	99.2	90	110				

Sample ID **N016001-001BDUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.101	0.20						0.1019	0	20	

Sample ID **N016001-001BMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.165	0.20	1.000	0.1019	106	90	110				

Sample ID **N016001-001BMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.189	0.20	1.000	0.1019	109	90	110	1.165	2.06	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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015944-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.204	0.20	1.000	0.1325	107	90	110				

Sample ID **N015944-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.200	0.20	1.000	0.1203	108	90	110				

Sample ID **N015944-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.153	0.20	1.000	0.1015	105	90	110				

Sample ID **N015944-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.201	0.20	1.000	0.1204	108	90	110				

Sample ID **N015944-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.207	0.20	1.000	0.1461	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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015944-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026683**

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	0.1216	106	90	110				

Sample ID **N015944-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026685**

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	0.1231	105	90	110				

Sample ID **N015944-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.144	0.20	1.000	0.1170	103	90	110				

Sample ID **N015944-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.195	0.20	1.000	0.1157	108	90	110				

Sample ID **N015944-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.198	0.20	1.000	0.1474	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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N015944-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.197	0.20	1.000	0.1278	107	90	110				

Sample ID **N015944-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.119	0.20	1.000	0.08020	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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **MB-R100880** SampType: **MBLK** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **PBW** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026734**

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-R100880** SampType: **LCS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **LCSW** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.959	0.20	5.000	0	99.2	90	110				

Sample ID **N016001-001BDUP** SampType: **DUP** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.101	0.20						0.1019	0	20	

Sample ID **N016001-001BMS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.165	0.20	1.000	0.1019	106	90	110				

Sample ID **N016001-001BMSD** SampType: **MSD** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.189	0.20	1.000	0.1019	109	90	110	1.165	2.06	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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID **N015944-004AMS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.296	0.20	1.000	0.2570	104	90	110				

Sample ID **N015944-005AMS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.232	0.20	1.000	0.1733	106	90	110				

Sample ID **N015944-012AMS** SampType: **MS** TestCode: **218.6_WU_P** Units: **µg/L** Prep Date: RunNo: **100880**
Client ID: **ZZZZZZ** Batch ID: **R100880** TestNo: **EPA 218.6** Analysis Date: **6/17/2015** SeqNo: **2026767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.583	0.20	1.000	0.5323	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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-50663** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **PBW** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023484**

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

Sample ID **LCS-50663** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **LCSW** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.323	1.0	10.00	0	93.2	85	115				

Sample ID **N015944-002C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.006	1.0	10.00	0	100	75	125				

Sample ID **N015944-002C-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.045	1.0	10.00	0	100	75	125	10.01	0.398	20	

Sample ID **N015944-015B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/16/2015** SeqNo: **2023504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.932	1.0	10.00	0	99.3	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		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-50744** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/24/2015** RunNo: **100941**
Client ID: **PBW** Batch ID: **50744** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/24/2015** SeqNo: **2028842**

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

Sample ID **LCS-50744** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/24/2015** RunNo: **100941**
Client ID: **LCSW** Batch ID: **50744** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/24/2015** SeqNo: **2028843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.720	1.0	10.00	0	97.2	85	115				

Sample ID **N016073-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/24/2015** RunNo: **100941**
Client ID: **ZZZZZZ** Batch ID: **50744** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/24/2015** SeqNo: **2028849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.680	1.0	10.00	1.543	111	75	125				

Sample ID **N016073-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/24/2015** RunNo: **100941**
Client ID: **ZZZZZZ** Batch ID: **50744** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/24/2015** SeqNo: **2028850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.601	1.0	10.00	1.543	111	75	125	12.68	0.624	20	

Sample ID **N016075-007B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/24/2015** RunNo: **100941**
Client ID: **ZZZZZZ** Batch ID: **50744** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2015** SeqNo: **2028879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	92.346	1.0	10.00	78.68	137	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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:06:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	6/24/2015

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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:16:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	6/24/2015

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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:56:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.31	0.022	0.050		mg/L	1	6/24/2015

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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	6/24/2015

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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	6/24/2015

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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:18:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	6/24/2015

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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	6/24/2015

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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	6/24/2015

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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:10:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **WETCHEM_150624C** QC Batch: **R100929** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	6/24/2015

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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 8:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_150624C**	QC Batch: **R100929**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.24	0.022	0.050		mg/L	1	6/24/2015

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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R100929** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100929**
Client ID: **PBW** Batch ID: **R100929** TestNo: **SM4500-NO3** Analysis Date: **6/24/2015** SeqNo: **2028488**

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-R100929** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100929**
Client ID: **LCSW** Batch ID: **R100929** TestNo: **SM4500-NO3** Analysis Date: **6/24/2015** SeqNo: **2028489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.510	0.050	0.5000	0	102	85	115				

Sample ID **N015944-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100929**
Client ID: **ZZZZZZ** Batch ID: **R100929** TestNo: **SM4500-NO3** Analysis Date: **6/24/2015** SeqNo: **2028491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.388	0.050						0.3928	1.31	20	

Sample ID **N015944-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100929**
Client ID: **ZZZZZZ** Batch ID: **R100929** TestNo: **SM4500-NO3** Analysis Date: **6/24/2015** SeqNo: **2028492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.936	0.050	0.5000	0.3928	109	75	125				

Sample ID **N015944-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **100929**
Client ID: **ZZZZZZ** Batch ID: **R100929** TestNo: **SM4500-NO3** Analysis Date: **6/24/2015** SeqNo: **2028493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.917	0.050	0.5000	0.3928	105	75	125	0.9364	2.06	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: *26-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015944
Project: PG&E Topock, 658017.01.04.02
Lab ID: N015944-001

Client Sample ID: C-CON-D-204
Collection Date: 6/10/2015 9:06:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 08:16 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	21	17	20		ug/L	1	6/12/2015 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:16:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 08:41 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 06:58 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015944
Project: PG&E Topock, 658017.01.04.02
Lab ID: N015944-003

Client Sample ID: C-MAR-S-204
Collection Date: 6/10/2015 11:56:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	250	17	20		ug/L	1	6/12/2015 08:54 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	1800	17	20		ug/L	1	6/12/2015 07:03 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 08:59 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	21	17	20		ug/L	1	6/12/2015 07:08 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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 09:04 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 07:13 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:18:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 09:09 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 07:18 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 09:14 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 07:22 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: *26-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015944
Project: PG&E Topock, 658017.01.04.02
Lab ID: N015944-010

Client Sample ID: C-NR4-D-204
Collection Date: 6/10/2015 10:52:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 09:19 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 07:27 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:10:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 09:24 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 07:57 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

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT: CH2M HILL
Lab Order: N015944
Project: PG&E Topock, 658017.01.04.02
Lab ID: N015944-013

Client Sample ID: RRB-204
Collection Date: 6/10/2015 8:30:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50662**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	ND	17	20		ug/L	1	6/12/2015 09:29 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_150612B**	QC Batch: **50661**				PrepDate	**6/12/2015**	Analyst: **CEI**
Iron	320	17	20		ug/L	1	6/12/2015 08:02 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: *26-Jun-15*

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-50662** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **PBW** Batch ID: **50662** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021159**

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

Sample ID **LCS-50662** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **LCSW** Batch ID: **50662** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	97.666	20	100.0	0	97.7	85	115				

Sample ID **N015944-001C-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **ZZZZZZ** Batch ID: **50662** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	95.842	20	100.0	0	95.8	75	125				

Sample ID **N015944-001C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **ZZZZZZ** Batch ID: **50662** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.902	20	100.0	0	98.9	75	125	95.84	3.14	20	

Sample ID **N015944-015B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **ZZZZZZ** Batch ID: **50662** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	129.360	20	100.0	30.40	99.0	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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-50661** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **PBW** Batch ID: **50661** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021249**

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

Sample ID **LCS-50661** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **LCSW** Batch ID: **50661** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	99.160	20	100.0	0	99.2	85	115				

Sample ID **N015944-001B-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **ZZZZZZ** Batch ID: **50661** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	127.006	20	100.0	20.76	106	75	125				

Sample ID **N015944-001B-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/12/2015** RunNo: **100760**
Client ID: **ZZZZZZ** Batch ID: **50661** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	127.307	20	100.0	20.76	107	75	125	127.0	0.237	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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:06:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.3	0.016	0.10		µg/L	1	6/15/2015 11:03 PM
Barium	120	0.072	1.0		µg/L	1	6/15/2015 11:03 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 11:03 PM
Molybdenum	4.5	0.029	0.50		µg/L	1	6/15/2015 11:03 PM
Selenium	1.6	0.070	0.50		µg/L	1	6/15/2015 11:03 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-CON-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:16:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**				PrepDate	**6/12/2015**	Analyst: **CEI**
Arsenic	2.2	0.016	0.10		µg/L	1	6/15/2015 11:09 PM
Barium	150	0.36	5.0		µg/L	5	6/15/2015 11:14 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 11:09 PM
Molybdenum	4.3	0.029	0.50		µg/L	1	6/15/2015 11:09 PM
Selenium	1.2	0.070	0.50		µg/L	1	6/15/2015 11:09 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MAR-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:56:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.8	0.016	0.10		µg/L	1	6/15/2015 11:37 PM
Barium	130	0.072	1.0		µg/L	1	6/15/2015 11:37 PM
Manganese	51	0.023	0.50		µg/L	1	6/15/2015 11:37 PM
Molybdenum	4.6	0.029	0.50		µg/L	1	6/15/2015 11:37 PM
Selenium	1.4	0.070	0.50		µg/L	1	6/15/2015 11:37 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:38:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/15/2015 11:42 PM
Barium	130	0.072	1.0		µg/L	1	6/15/2015 11:42 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 11:42 PM
Molybdenum	4.6	0.029	0.50		µg/L	1	6/15/2015 11:42 PM
Selenium	1.5	0.070	0.50		µg/L	1	6/15/2015 11:42 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR1-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 9:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.2	0.016	0.10		µg/L	1	6/15/2015 11:59 PM
Barium	120	0.072	1.0		µg/L	1	6/15/2015 11:59 PM
Manganese	ND	0.023	0.50		µg/L	1	6/15/2015 11:59 PM
Molybdenum	4.4	0.029	0.50		µg/L	1	6/15/2015 11:59 PM
Selenium	1.5	0.070	0.50		µg/L	1	6/17/2015 04:00 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:18:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.2	0.016	0.10		µg/L	1	6/16/2015 12:04 AM
Barium	120	0.072	1.0		µg/L	1	6/16/2015 12:04 AM
Manganese	ND	0.023	0.50		µg/L	1	6/16/2015 12:04 AM
Molybdenum	4.5	0.029	0.50		µg/L	1	6/16/2015 12:04 AM
Selenium	1.6	0.070	0.50		µg/L	1	6/16/2015 12:04 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.2	0.016	0.10		µg/L	1	6/16/2015 12:10 AM
Barium	130	0.072	1.0		µg/L	1	6/16/2015 12:10 AM
Manganese	ND	0.023	0.50		µg/L	1	6/16/2015 12:10 AM
Molybdenum	4.6	0.029	0.50		µg/L	1	6/16/2015 12:10 AM
Selenium	1.6	0.070	0.50		µg/L	1	6/17/2015 04:06 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-D-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 10:52:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.3	0.016	0.10		µg/L	1	6/16/2015 12:16 AM
Barium	120	0.072	1.0		µg/L	1	6/16/2015 12:16 AM
Manganese	ND	0.023	0.50		µg/L	1	6/16/2015 12:16 AM
Molybdenum	4.3	0.029	0.50		µg/L	1	6/16/2015 12:16 AM
Selenium	1.2	0.070	0.50		µg/L	1	6/16/2015 12:16 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR4-S-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 11:10:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.4	0.016	0.10		µg/L	1	6/16/2015 12:21 AM
Barium	130	0.072	1.0		µg/L	1	6/16/2015 12:21 AM
Manganese	ND	0.023	0.50		µg/L	1	6/16/2015 12:21 AM
Molybdenum	4.5	0.029	0.50		µg/L	1	6/16/2015 12:21 AM
Selenium	1.6	0.070	0.50		µg/L	1	6/16/2015 12:21 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: *26-Jun-15*

CLIENT:	CH2M HILL	**Client Sample ID:**	RRB-204
Lab Order:	N015944	**Collection Date:**	6/10/2015 8:30:00 AM
Project:	PG&E Topock, 658017.01.04.02	**Matrix:**	WATER
Lab ID:	N015944-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_150615B**	QC Batch: **50663**			PrepDate	**6/12/2015**		Analyst: **CEI**
Arsenic	2.6	0.016	0.10		µg/L	1	6/16/2015 12:27 AM
Barium	120	0.072	1.0		µg/L	1	6/16/2015 12:27 AM
Manganese	8.5	0.023	0.50		µg/L	1	6/16/2015 12:27 AM
Molybdenum	4.6	0.029	0.50		µg/L	1	6/16/2015 12:27 AM
Selenium	1.4	0.070	0.50		µg/L	1	6/16/2015 12:27 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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-50663** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **PBW** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023544**

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-50663** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **LCSW** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.265	0.10	10.00	0	92.6	85	115				
Barium	94.864	1.0	100.0	0	94.9	85	115				
Manganese	92.679	0.50	100.0	0	92.7	85	115				
Molybdenum	8.650	0.50	10.00	0	86.5	85	115				
Selenium	8.869	0.50	10.00	0	88.7	85	115				

Sample ID **N015944-002C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.296	0.10	10.00	2.155	101	75	125				
Manganese	94.601	0.50	100.0	0	94.6	75	125				
Molybdenum	15.063	0.50	10.00	4.313	108	75	125				
Selenium	10.611	0.50	10.00	1.240	93.7	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		

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015944-002C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.405	0.10	10.00	2.155	102	75	125	12.30	0.880	20	
Manganese	94.572	0.50	100.0	0	94.6	75	125	94.60	0.0302	20	
Molybdenum	15.250	0.50	10.00	4.313	109	75	125	15.06	1.23	20	
Selenium	10.997	0.50	10.00	1.240	97.6	75	125	10.61	3.57	20	

Sample ID **N015944-015B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100795**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/16/2015** SeqNo: **2023564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.238	0.10	10.00	2.427	98.1	75	125				
Manganese	97.908	0.50	100.0	1.627	96.3	75	125				
Molybdenum	15.052	0.50	10.00	4.665	104	75	125				

Sample ID **N015944-002C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100831**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/17/2015** SeqNo: **2024464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	240.041	5.0	100.0	147.0	93.0	75	125				

Sample ID **N015944-002C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100831**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/17/2015** SeqNo: **2024465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	240.114	5.0	100.0	147.0	93.1	75	125	240.0	0.0301	20	

Sample ID **N015944-015B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/12/2015** RunNo: **100831**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/17/2015** SeqNo: **2024469**

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		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N015944-015B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	6/12/2015	RunNo:	100831
Client ID:	ZZZZZZ	Batch ID:	50663	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/17/2015	SeqNo:	2024469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	245.595	5.0	100.0	137.9	108	75	125				

Sample ID	N015944-015B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	6/12/2015	RunNo:	100795
Client ID:	ZZZZZZ	Batch ID:	50663	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/16/2015	SeqNo:	2029673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.610	0.50	10.00	1.490	91.2	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

6/10/2015 1:36:13 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number ~~WW-PGE-2623, 658~~32C
Task Order 658017.01.04.02
Project 2015-RMP-204
Turnaround Time 10 Days
Shipping Date: 5/29/2015
COC Number: RMP-204

			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	HNO3, 4°C	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-204	6/10/2015	9:06	Water	X		X	X	X	X	X	X	X	N015944-01	9	
C-CON-S-204	6/10/2015	9:16	Water	X		X	X	X	X	X	X	X	-02	9	
C-MAR-S-204	6/10/2015	11:56	Water	X		X	X	X	X	X	X	X	-03	9	
C-MW-82-204	6/10/2015	8:20	Water		X								-04	1	
C-MW-83-204	6/10/2015	11:48	Water		X								-05	1	
C-NR1-D-204	6/10/2015	9:38	Water	X		X	X	X	X	X	X	X	-06	9	
C-NR1-S-204	6/10/2015	9:52	Water	X		X	X	X	X	X	X	X	-07	9	
C-NR3-D-204	6/10/2015	10:18	Water	X		X	X	X	X	X	X	X	-08	9	
C-NR3-S-204	6/10/2015	10:30	Water	X		X	X	X	X	X	X	X	-09	9	
C-NR4-D-204	6/10/2015	10:52	Water	X		X	X	X	X	X	X	X	-10	9	
C-NR4-S-204	6/10/2015	11:10	Water	X		X	X	X	X	X	X	X	-11	9	
RMP-AB2-204	6/10/2015	12:30	Water		X								-12	1	
RRB-204	6/10/2015	8:30	Water	X		X	X	X	X	X	X	X	-13	9	

Signatures	Date/Time
Approved by	
Sampled by	6-10-15 1620
Relinquished by	
Received by	6/10/15 @ 1620
Relinquished by	
Received by	6/10/15 @ 1813

Shipping Details

Method of Shipment: ~~FedEx~~ Courier - ATL
On Ice: yes / no 4.8, 5.6, 3.4°C
Airbill No: ICE ~~IR~~ #2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
June 10-11, 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 6/10/2015 1:36:14 PM Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number ~~WW-PGE-2623, 658~~ BSL 658017.01.04.02
Task Order
Project 2015-RMP-204
Turnaround Time 10 Days
Shipping Date: 5/29/2015
COC Number: RMP-204

	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
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	HNO3, 4°C	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			
SW1-204	6/10/2015	6:38	Water	X			X		X	X			N015944 - 14	7	
SW2-204	6/10/2015	6:44	Water	X			X		X	X			-15	7	
													TOTAL NUMBER OF CONTAINERS	~~108~~ 107	

	Signatures	Date/Time
Approved by		6-10-15
Sampled by		1620
Relinquished by		
Received by		6/10/15@1620
Relinquished by		
Received by		6/10/15@1813

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 4.8, 5.6, 3.4°C
Airbill No: ICE IR#2
Lab Name: Asset Laboratories
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
June 10-11, 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:	6/10/2015	Workorder:	N015944
Rep sample Temp (Deg C):	4.8/5.6/3.4	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
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 MBC for jog 06/16/15

Reviewed By: jog 06/17/15

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 **N015944-003D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4549-1.1.4496)*1000000}{100}$$
$$= 53 \text{ mg/L}$$

Reporting results in two significant figures,

TSS, mg/L = 53

Silia Ramit 6/19/2015

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

	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: 6/15/15						
MB-50675	100	1.4165	1.4165	0.0000	1.00	0
LCS-50675	100	1.4235	1.5305	1070.0000	1.00	1070
N015932-013D	100	1.4416	1.4417	1.0000	1.00	1
N015932-014D	100	1.4438	1.444	2.0000	1.00	2
N015944-001D	100	1.4416	1.4419	3.0000	1.00	3
N015944-001D DUP	100	1.4245	1.4249	4.0000	1.00	4
N015944-002D	100	1.4379	1.438	1.0000	1.00	1
N015944-003D	100	1.4496	1.4549	53.0000	1.00	53
N015944-006D	100	1.4404	1.4406	2.0000	1.00	2
N015944-007D	100	1.4474	1.4475	1.0000	1.00	1
N015944-008D	100	1.4437	1.4438	1.0000	1.00	1
N015944-009D	100	1.4307	1.4308	1.0000	1.00	1
N015944-010D	100	1.4233	1.4235	2.0000	1.00	2

Silia Ramit 6/19/2015

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

	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: 6/16/15						
MB-50691	100	1.4292	1.4295	3.0000	1.00	3
LCS-50691	100	1.4099	1.5027	928.0000	1.00	928
N015944-011D	100	1.4257	1.4261	4.0000	1.00	4
N015944-013D	100	1.4255	1.427	15.0000	1.00	15
N015948-003A	50	1.4325	1.4391	66.0000	2.00	132
N015948-003ADUP	50	1.4215	1.4284	69.0000	2.00	138

Silia Ramit 6/19/2015

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 **N015944-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.1325 * 1

= 0.1325

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 **N015944-012A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.5323 * 1

= 0.5323

Reporting result in two significant figures,

Cr^{+6}, µg/L = 0.53

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 **N015944-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.3928* 1

= 0.3928 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.39 mg/L

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 **N015944-003C**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.2525356175 * 1 * (25/25) * 1000

= 252.5356175

Reporting results in two significant figures,

Iron, ug/L = 250

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015944
Test Method: EPA 6010
Analysis Date: 06/12/15

Matrix: Water
Batch No.: 50662

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

Comments:

Analyzed By: Claire E. Ignacio

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

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015944-001C-DT 5X	Iron	µg/L	0	NA	0		10

Note: NA - Not Applicable

ASSET Laboratories

Date: *14-Jun-15*

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N015944-001C-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **100760**

Client ID: **ZZZZZZ** Batch ID: **50662** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.424	20	100.0	0	107	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 **N015944-001B**, the concentration in ug/L is calculated as follows:

Iron, ug/L = 0.02076290806 * 1 * (25/25) * 1000

= 20.76290806

Reporting results in two significant figures,

Iron, ug/L = 21

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015944
Test Method: EPA 6010
Analysis Date: 06/12/15

Matrix: Water
Batch No.: 50661

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

Comments:

Analyzed By: Claire E. Ignacio

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

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N015944-001B-DT 5X	Iron	µg/L	0	NA	20.76290806	100.00%	10

Note: NA - Not Applicable

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID: **N015944-001B-PS** SampType: **PS** TestCode: **6010_WPGEP** Units: **ug/L** Prep Date: RunNo: **100760**

Client ID: **ZZZZZZ** Batch ID: **50661** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/12/2015** SeqNo: **2021255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	123.789	20	100.0	20.76	103	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 **N015944-001C,** the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 2.2809225369 * 1 * (25/25)

= 2.2809225369

Reporting results in two significant figures,

Arsenic, ug/L = 2.3

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015944
Test Method: EPA 6020
Analysis Date: 6/15/2015

Matrix: Water
Batch No.: 50663

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mn, Mo and Se. The calculated concentrations are < 25X RL's.
Dilution test failed for As. PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015944-002C-DT 5X	Arsenic	µg/L	2.711064877	FAIL	2.155363759	25.78%	10
N015944-002C-DT 5X	Chromium	µg/L	0	NA	0		10
N015944-002C-DT 5X	Manganese	µg/L	0	NA	0		10
N015944-002C-DT 5X	Molybdenum	µg/L	5.021605369	NA	4.313195972	16.42%	10
N015944-002C-DT 5X	Selenium	µg/L	1.961489854	NA	1.239693482	58.22%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015944
Test Method: EPA 6020
Analysis Date: 6/17/2015

Matrix: Water
Batch No.: 50663

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

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N015944-002C-DT 25X	Barium	µg/L	139.4539075	PASS	147.0260882	5.15%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N015944
Test Method: EPA 6020
Analysis Date: 6/24/2015

Matrix: Water
Batch No.: 50744

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

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is < 25X RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N016073-001B-DT 5X	Chromium	µg/L	1.789669395	NA	1.543052832	15.98%	10

Note: NA - Not applicable

CLIENT: CH2M HILL
Work Order: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N015944-002C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100795**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2015** SeqNo: **2023549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.097	0.10	10.00	2.155	99.4	80	120				
Manganese	94.447	0.50	100.0	0	94.4	80	120				
Molybdenum	14.979	0.50	10.00	4.313	107	80	120				
Selenium	10.138	0.50	10.00	1.240	89.0	80	120				

Sample ID **N015944-002C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **100831**
Client ID: **ZZZZZZ** Batch ID: **50663** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/17/2015** SeqNo: **2024463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	241.966	5.0	100.0	147.0	94.9	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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N015944-002C-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	100795
Client ID:	ZZZZZZ	Batch ID:	50663	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/15/2015	SeqNo:	2023489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.894	1.0	10.00	0	98.9	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: N015944
Project: PG&E Topock, 658017.01.04.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N016073-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	100941
Client ID:	ZZZZZZ	Batch ID:	50744	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/24/2015	SeqNo:	2028848

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.726	1.0	10.00	1.543	112	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, April 2014 through June 2015
Second 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		MD	1.6
		12-May-15		MD	1.7
MW-10	SA	02-Dec-14		MD	3.2
MW-11	SA	02-Dec-14		MD	1.5
		02-Dec-14	FD	MD	1.4
		12-May-15		MD	1.4
MW-12	SA	01-May-14		3V	38.0
		15-Dec-14		MD	40.0
MW-13	SA	13-Nov-14		MD	1.9
MW-14	SA	12-Nov-14		MD	0.94
		06-May-15		MD	0.88
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		MD	3.9
		15-Dec-14	FD	MD	3.9
		19-May-15		MD	4.8
MW-22	SA	30-Apr-14		3V	12.0
		18-Dec-14		MD	14.0
		22-Apr-15		MD	12.0
MW-23-060	BR	22-Apr-14		3V	2.6
		10-Nov-14		3V	3.1
		30-Apr-15		3V	3.1
MW-23-080	BR	22-Apr-14		3V	2.7
		10-Nov-14		3V	3.4
		30-Apr-15		3V	3.6
MW-24A	SA	04-Nov-14		MD	0.28
		29-Apr-15		MD	ND (0.10)
		29-Apr-15	FD	MD	ND (0.10)
MW-24B	DA	18-Dec-14		MD	2.5
		29-Apr-15		MD	2.3
MW-24BR	BR	04-Dec-14		3V	0.41
MW-25	SA	02-Dec-14		MD	1.2
		11-May-15		MD	1.1
MW-26	SA	05-May-14		3V	1.7
		15-Dec-14		MD	2.1

TABLE C-1
Arsenic Results in Monitoring Wells, April 2014 through June 2015
Second 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-26	SA	15-Dec-14	FD	MD	1.9
		19-May-15		MD	1.8
MW-27-20	SA	14-Apr-14		3V	0.84
		04-Nov-14		MD	1.7
MW-27-60	MA	14-Apr-14		3V	6.9
		14-Apr-14	FD	3V	7.2
		04-Nov-14		MD	11.0
		04-Nov-14	FD	MD	11.0
MW-27-85	DA	14-Apr-14		3V	0.18
		04-Nov-14		MD	1.6
		20-Apr-15		MD	1.0
		20-Apr-15	FD	MD	1.0
MW-28-25	SA	15-Apr-14		3V	1.8
		11-Nov-14		MD	1.0
		21-Apr-15		MD	1.1
MW-28-90	DA	15-Apr-14		3V	1.8
		15-Apr-14	FD	3V	1.8
		11-Nov-14		MD	1.7
		21-Apr-15		MD	1.7
MW-29	SA	16-Apr-14		3V	5.7
		10-Nov-14		MD	7.8
		21-Apr-15		MD	6.8
MW-30-30	SA	10-Nov-14		MD	1.1
MW-30-50	MA	10-Nov-14		MD	2.7
		10-Nov-14	FD	MD	2.8
MW-31-60	SA	03-Dec-14		MD	1.1
		13-May-15		MD	1.1
MW-31-135	DA	05-Nov-14		MD	3.3
MW-32-20	SA	11-Nov-14		MD	3.3
		11-Nov-14	FD	MD	3.7
MW-32-35	SA	16-Apr-14		3V	27.0
		11-Nov-14		MD	21.0
		20-Apr-15		MD	2.3
MW-33-40	SA	17-Apr-14		3V	14.0
		11-Nov-14		MD	8.9
		27-Apr-15		MD	11.0

TABLE C-1
Arsenic Results in Monitoring Wells, April 2014 through June 2015
Second 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-33-90	MA	21-Apr-14		3V	1.3
		21-Apr-14	FD	3V	1.3
		12-Nov-14		MD	1.2
		27-Apr-15		MD	0.99
MW-33-150	DA	17-Apr-14		3V	1.1
		12-Nov-14		MD	0.74
		27-Apr-15		MD	1.0
MW-33-210	DA	21-Apr-14		3V	0.94
		12-Nov-14		MD	1.0
		27-Apr-15		MD	0.92
		27-Apr-15	FD	MD	0.88
MW-34-55	MA	06-Nov-14		MD	2.1
MW-34-80	DA	17-Apr-14		3V	1.4
		06-Nov-14		MD	1.3
		20-Apr-15		MD	1.3
MW-34-100	DA	17-Apr-14		3V	1.3
		02-Oct-14		MD	1.3
		01-Dec-14		MD	1.6
		01-Dec-14	FD	MD	1.5
		16-Feb-15		MD	1.5
		20-Apr-15		MD	0.84
		20-Apr-15	FD	MD	0.86
MW-35-60	SA	24-Apr-14		3V	1.0
		24-Apr-14	FD	3V	1.0
		13-Nov-14		MD	0.93
		07-May-15		MD	1.1
MW-35-135	DA	13-Nov-14		MD	0.84
		07-May-15		MD	0.85
MW-36-20	SA	15-Dec-14		MD	1.7
MW-36-40	SA	15-Dec-14		MD	4.7
MW-36-50	MA	15-Dec-14		MD	4.3
MW-36-70	MA	15-Dec-14		MD	3.3
MW-36-90	DA	17-Apr-14		3V	19.0
		15-Dec-14		MD	25.0
		23-Apr-15		MD	20.0
MW-36-100	DA	17-Apr-14		3V	8.5

TABLE C-1
Arsenic Results in Monitoring Wells, April 2014 through June 2015
Second 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-36-100	DA	13-Nov-14		MD	8.9
		23-Apr-15		MD	8.3
MW-37S	MA	12-Nov-14		MD	1.8
MW-38D	DA	14-May-14		3V	6.5
		05-Nov-14		3V	7.4
		30-Apr-15		3V	6.3
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
		30-Apr-15		3V	13.0
MW-39-40	SA	16-Dec-14		MD	21.0
MW-39-50	MA	16-Dec-14		MD	3.1
MW-39-60	MA	16-Dec-14		MD	5.3
		16-Dec-14	FD	MD	6.1
MW-39-100	DA	01-Dec-14		MD	2.0
		21-Apr-15		MD	4.1
MW-40D	DA	24-Apr-14		3V	3.9
		04-Dec-14		MD	4.5
		12-May-15		MD	4.3
MW-40S	SA	04-Dec-14		MD	1.2
MW-41D	DA	17-Dec-14		MD	2.9
		06-May-15		MD	1.8
MW-41M	DA	04-Nov-14		MD	1.9
		04-Nov-14	FD	MD	1.9
MW-41S	SA	04-Nov-14		MD	1.8
MW-42-30	SA	05-Nov-14		MD	3.8
MW-42-55	MA	14-Apr-14		3V	11.0
		06-Nov-14		MD	18.0
		20-Apr-15		MD	21.0
MW-42-65	MA	14-Apr-14		3V	3.0
		06-Nov-14		MD	3.6
		20-Apr-15		MD	3.2
MW-43-25	SA	15-Apr-14		3V	16.0
		05-Nov-14		MD	23.0
MW-43-75	DA	05-Nov-14		MD	13.0

TABLE C-1
Arsenic Results in Monitoring Wells, April 2014 through June 2015
Second 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		MD	2.9
MW-44-70	MA	16-Apr-14		3V	4.2
		11-Nov-14		MD	4.5
		23-Apr-15		MD	3.7
MW-44-115	DA	16-Apr-14		3V	5.8
		23-Sep-14		MD	5.5
		23-Sep-14	FD	MD	5.5
		12-Nov-14		MD	5.4
		17-Feb-15		MD	5.6
		17-Feb-15	FD	MD	5.5
		23-Apr-15		MD	5.2
MW-44-125	DA	16-Apr-14		3V	2.7
		16-Apr-14	FD	3V	3.2
		12-Nov-14		MD	3.3
		12-Nov-14	FD	MD	3.2
		23-Apr-15		MD	3.1
		23-Apr-15	FD	MD	3.1
MW-47-55	SA	11-Nov-14		MD	1.1
		07-May-15		MD	1.0
MW-49-135	DA	22-Dec-14		MD	1.6
MW-50-200	DA	16-Dec-14		MD	3.1
MW-51	MA	12-May-14		3V	3.9
		15-Dec-14		MD	3.7
		20-May-15		MD	3.4
MW-52D	DA	30-Apr-14		Slant	3.3
		17-Dec-14		Slant	3.5
		22-Apr-15		Slant	2.8
MW-52M	DA	30-Apr-14		Slant	1.4
		17-Dec-14		Slant	1.8
		22-Apr-15		Slant	1.5
MW-52S	MA	30-Apr-14		Slant	0.21
		17-Dec-14		Slant	0.16
		22-Apr-15		Slant	0.12
MW-53D	DA	30-Apr-14		Slant	3.4
		17-Dec-14		Slant	2.9

TABLE C-1
Arsenic Results in Monitoring Wells, April 2014 through June 2015
Second 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-53D	DA	22-Apr-15		Slant	3.0
MW-53M	DA	30-Apr-14		Slant	0.84
		17-Dec-14		Slant	0.85
		22-Apr-15		Slant	0.68
MW-54-85	DA	09-Apr-14		3V	3.5
		18-Nov-14		MD	3.5
		18-Nov-14	FD	MD	3.6
		28-Apr-15		MD	4.5
MW-54-140	DA	09-Apr-14		3V	2.6
		09-Apr-14	FD	3V	1.4
		18-Nov-14		MD	3.1
		28-Apr-15		MD	3.1
MW-54-195	DA	09-Apr-14		3V	0.23
		18-Nov-14		MD	ND (1.0)
		28-Apr-15		MD	1.1
MW-57-070	BR	10-Dec-14		3V	1.4
		21-May-15		3V	1.3
MW-57-185	BR	22-Apr-14		3V	13.0
		10-Nov-14		3V	12.0
		11-May-15		3V	15.0
MW-58BR	BR	06-May-14		MD	1.0
		24-Sep-14		MD	1.1
		09-Dec-14		MD	1.1
		10-Feb-15		MD	1.2
		18-May-15		MD	1.2
MW-59-100	SA	07-May-14		3V	2.1
		15-Dec-14		MD	2.1
		15-Dec-14	FD	MD	2.0
		19-May-15		MD	2.2
MW-60-125	BR	01-May-14		3V	1.5
		10-Dec-14		3V	1.8
		14-May-15		3V	1.3
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
		14-May-15		3V	6.7

TABLE C-1
Arsenic Results in Monitoring Wells, April 2014 through June 2015
Second 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-61-110	BR	29-Apr-14		3V	3.1
		10-Dec-14		3V	3.4
		13-May-15		3V	3.3
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
		13-May-15		3V	1.4
		13-May-15	FD	3V	1.5
MW-62-110	BR	07-May-14		Flute	6.0
		23-Sep-14		Flute	6.4
		09-Dec-14		Flute	6.7
		11-Feb-15		Flute	6.3
		19-May-15		Flute	7.4
MW-62-190	BR	07-May-14		Flute	3.6
		09-Dec-14		Flute	4.7
		19-May-15		Flute	3.8
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
		29-Apr-15		3V	1.2
MW-64BR	BR	06-May-14		MD	2.9
		30-Sep-14		MD	2.0
		08-Dec-14		MD	3.0
		18-Feb-15		MD	2.8
		18-May-15		MD	6.0
MW-65-160	SA	24-Apr-14		3V	0.72
		25-Sep-14		MD	0.80
		03-Dec-14		MD	0.61
		24-Mar-15		MD	0.67
		11-May-15		MD	0.62
		11-May-15	FD	MD	0.64
MW-65-225	DA	29-Apr-14		3V	2.2
		25-Sep-14		MD	2.6
		03-Dec-14		MD	2.9
		17-Feb-15		MD	2.8

TABLE C-1
Arsenic Results in Monitoring Wells, April 2014 through June 2015
Second 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-65-225	DA	11-May-15		MD	2.9
MW-66-165	SA	01-May-14		3V	1.2
		01-May-14	FD	3V	1.3
		10-Dec-14		MD	1.1
		13-May-15		MD	1.2
MW-66-230	DA	07-May-14		3V	8.5
		22-Dec-14		MD	6.6
		21-May-15		MD	6.3
MW-66BR-270	BR	13-May-14		3V	ND (0.50)
		16-Dec-14		3V	ND (0.50)
		18-May-15		3V	ND (0.10)
MW-67-185	SA	05-May-14		3V	1.5
		11-Dec-14		MD	1.2
		20-May-15		MD	1.2
MW-67-225	MA	06-May-14		3V	3.1
		11-Dec-14		MD	3.1
		20-May-15		MD	3.2
MW-67-260	DA	05-May-14		3V	11.0
		11-Dec-14		MD	8.0
		20-May-15		MD	8.2
MW-68-180	SA	12-May-14		3V	2.9
		30-Sep-14		MD	2.5
		09-Dec-14		MD	2.5
		18-Feb-15		MD	2.4
		18-May-15		MD	2.8
MW-68-240	DA	06-May-14		3V	1.9
		06-May-14	FD	3V	1.8
		18-Dec-14		MD	1.6
		21-May-15		MD	1.8
MW-68BR-280	BR	13-May-14		3V	1.3
		18-Dec-14		3V	1.2
		27-May-15		3V	1.3
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, April 2014 through June 2015
Second 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-69-195	BR	14-May-15	3V	2.3
		14-May-15 FD	3V	2.3
MW-70-105	BR	28-Apr-14	3V	4.6
		02-Dec-14	3V	4.5
		07-May-15	3V	4.3
MW-70BR-225	BR	05-May-14	3V	1.9
		16-Dec-14	3V	1.9
		27-May-15	3V	1.9
MW-71-035	SA	24-Apr-14	3V	1.3
		06-Nov-14	MD	1.3
		06-May-15	MD	10.0
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
		11-May-15	3V	11.0
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
		04-May-15	3V	12.0
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
		06-May-15	3V	1.5
MW-74-240	BR	01-May-14	3V	12.0
		11-Dec-14	3V	9.7
		14-May-15	3V	9.9

Notes:

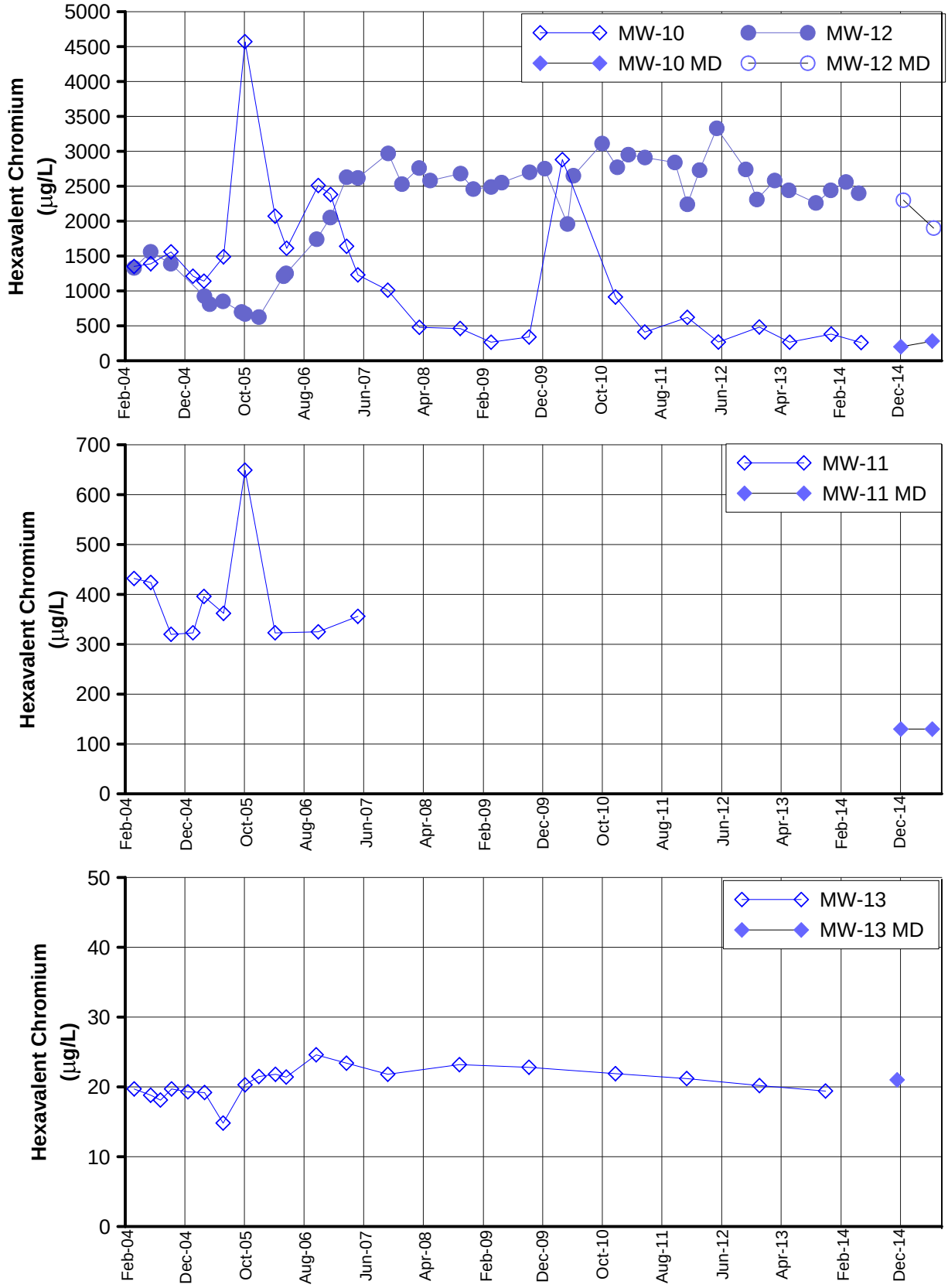
3V = three volume.
FD = field duplicate.
J = concentration or reporting limit estimated by laboratory or data validation.
MD = minimal drawdown.
ND = not detected at listed reporting limit.
µg/L = micrograms per liter.

Starting in Third Quarter 2014, the groundwater sample collection method was switched from the traditional three-volume purge method (3V) to the minimal drawdown (MD) 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:

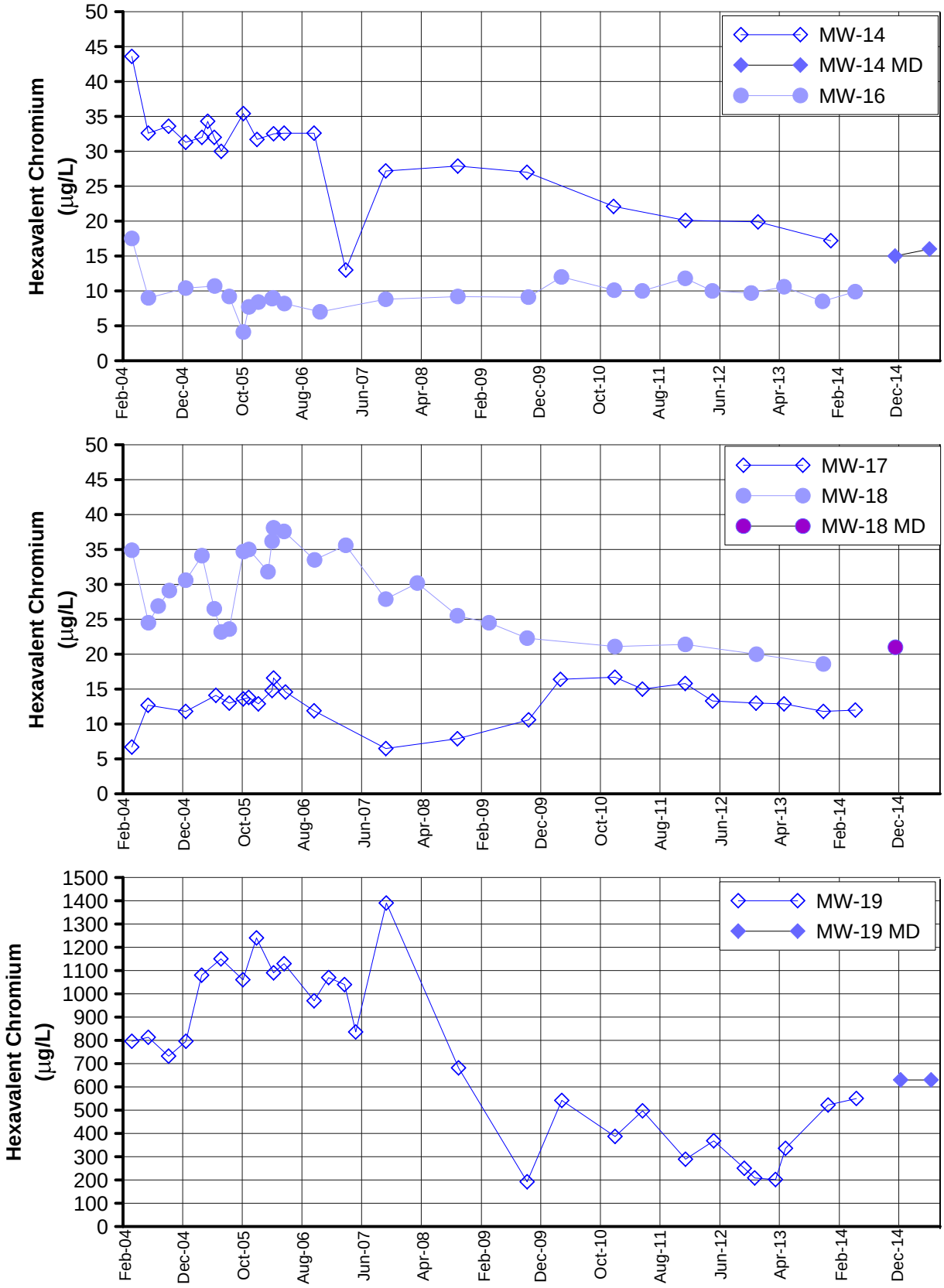
1) For MW-11 data from July 2007 - June 2014, please see: ARCADIS. 2014. *2014 Annual Monitoring Report for the Upland Reductive Zone In-Situ Pilot Test*. November 19.

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-1
HEXAVALENT CHROMIUM
IN MW-10, MW-11, MW-12, AND MW-13

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

CH2MHILL

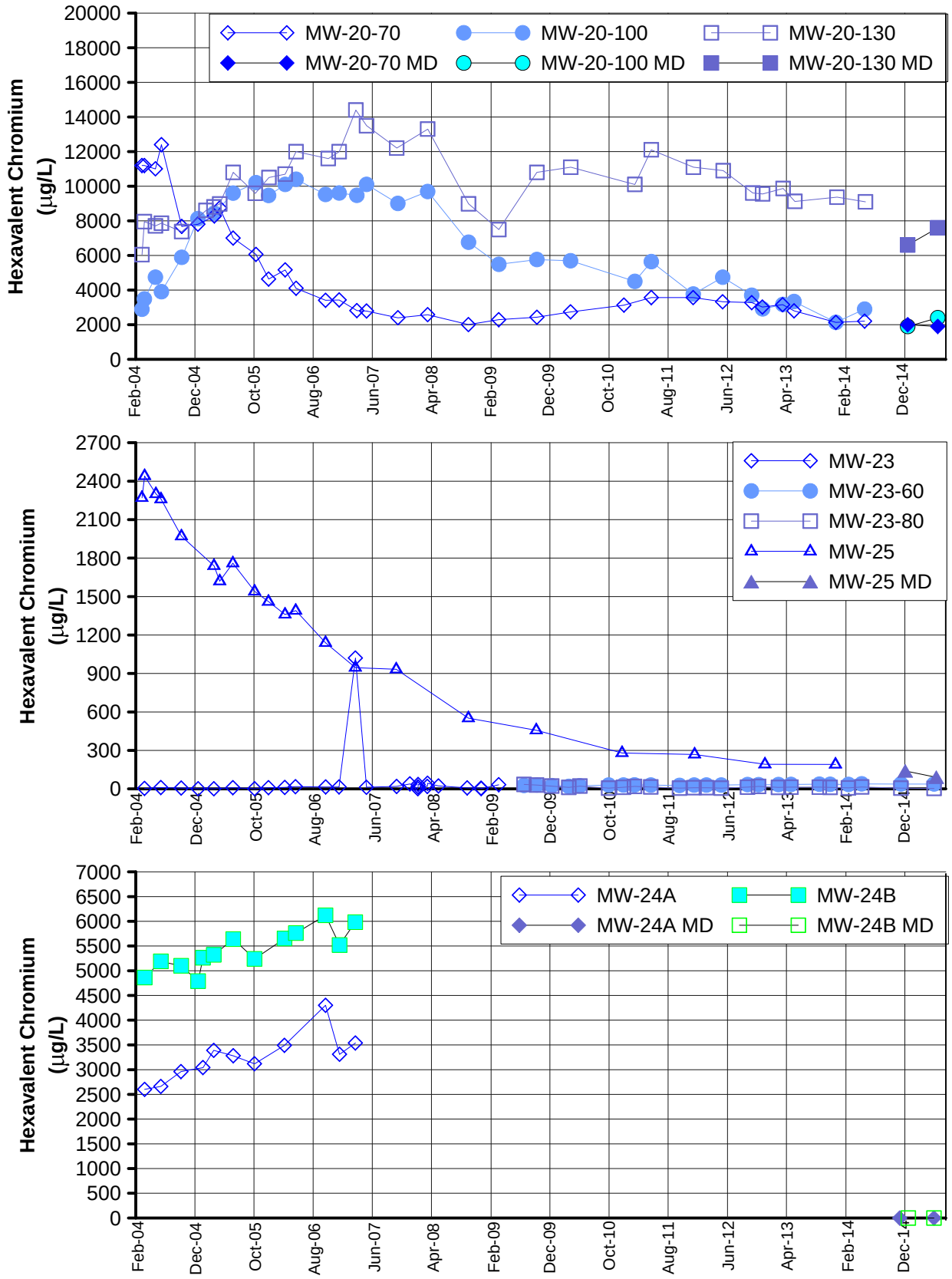


Notes:

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) 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
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



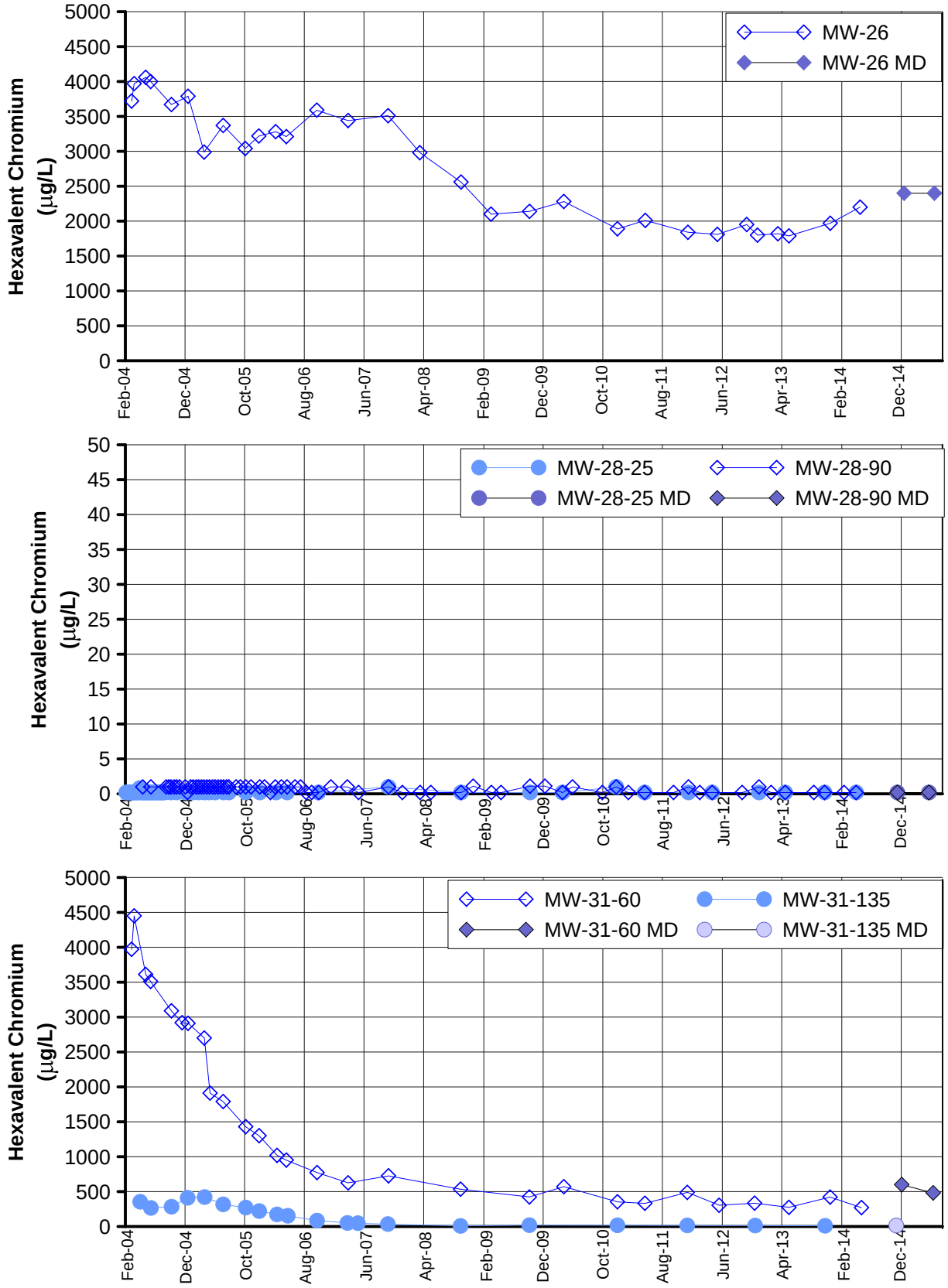
Notes:

1) For MW-24 data from July 2007 - June 2014, please see: ARCADIS. 2014. *2014 Annual Monitoring Report for the Upland Reductive Zone In-Situ Pilot Test*. November 19.

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-3
HEXAVALENT CHROMIUM
IN MW-20, MW-23, AND MW-24 CLUSTERS AND MW-25
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

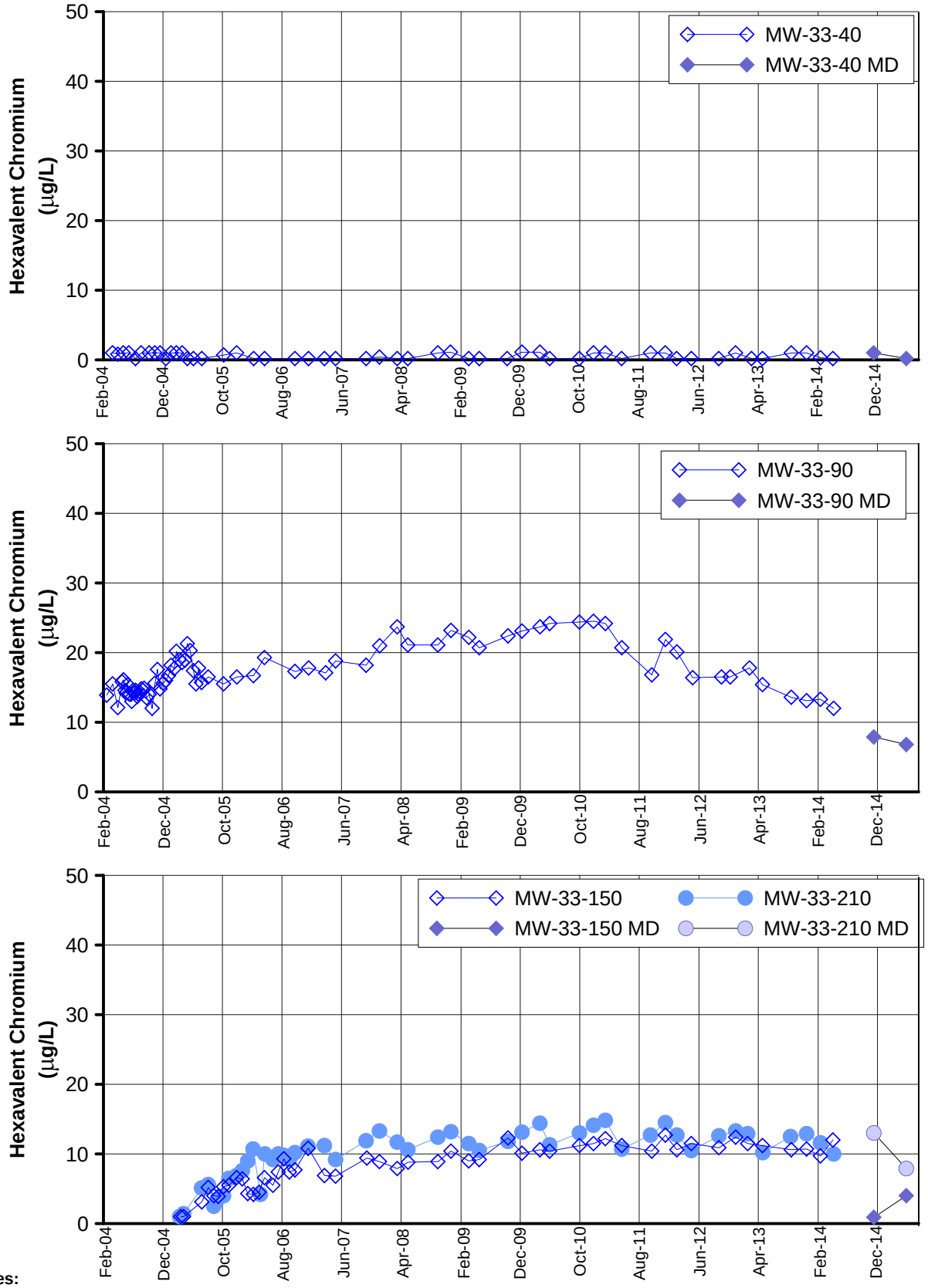


Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-28-90 is 20 µg/L.

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-4
HEXAVALENT CHROMIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

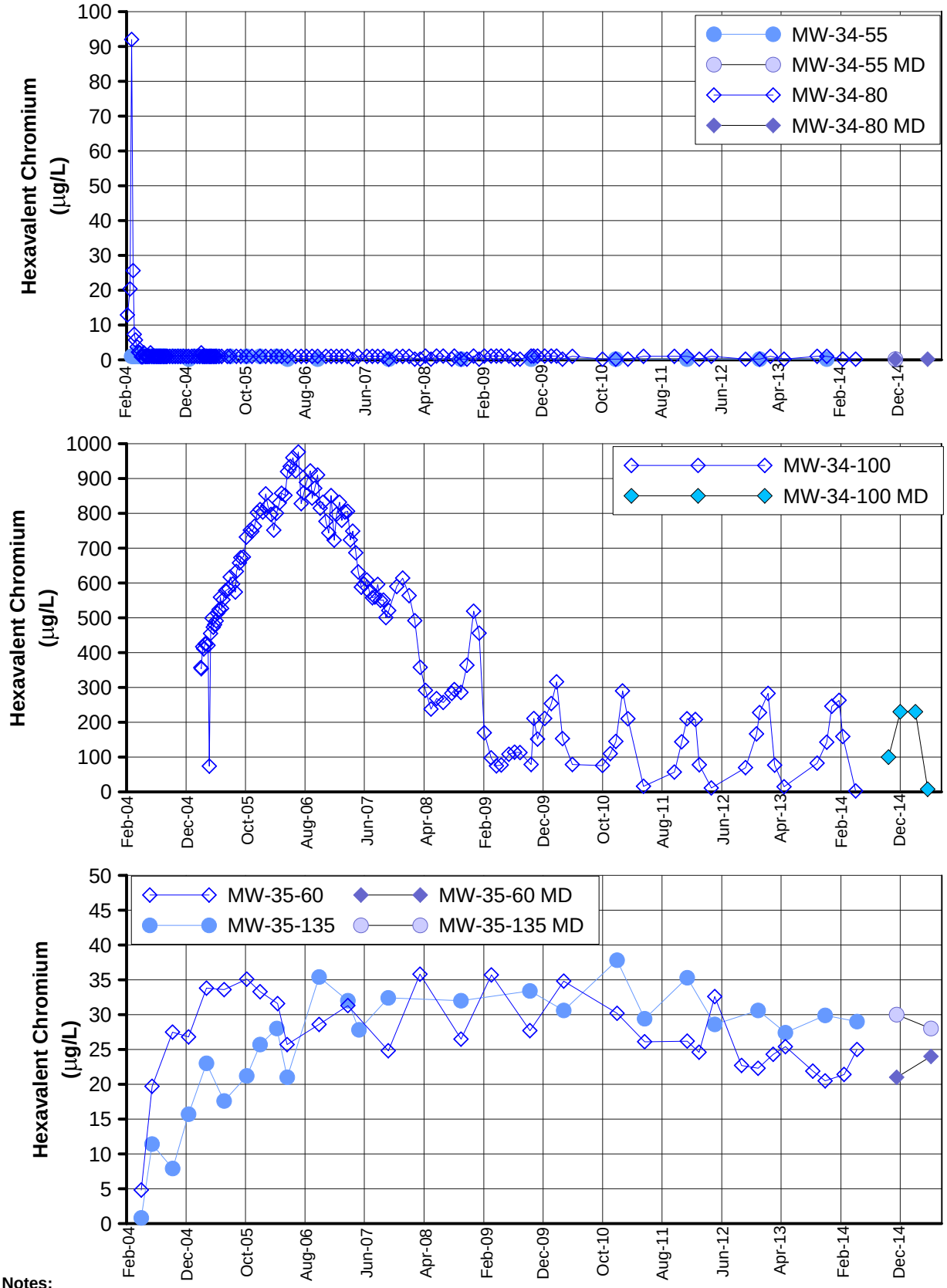
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-33-40 is 20 µg/L.
3) The trigger level for MW-33-90 is 25 µg/L.
4) The trigger level for MW-33-150 is 20 µg/L.
5) The trigger level for MW-33-210 is 20 µg/L.

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-5
HEXAVALENT CHROMIUM
IN MW-33 CLUSTER

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

CH2MHILL



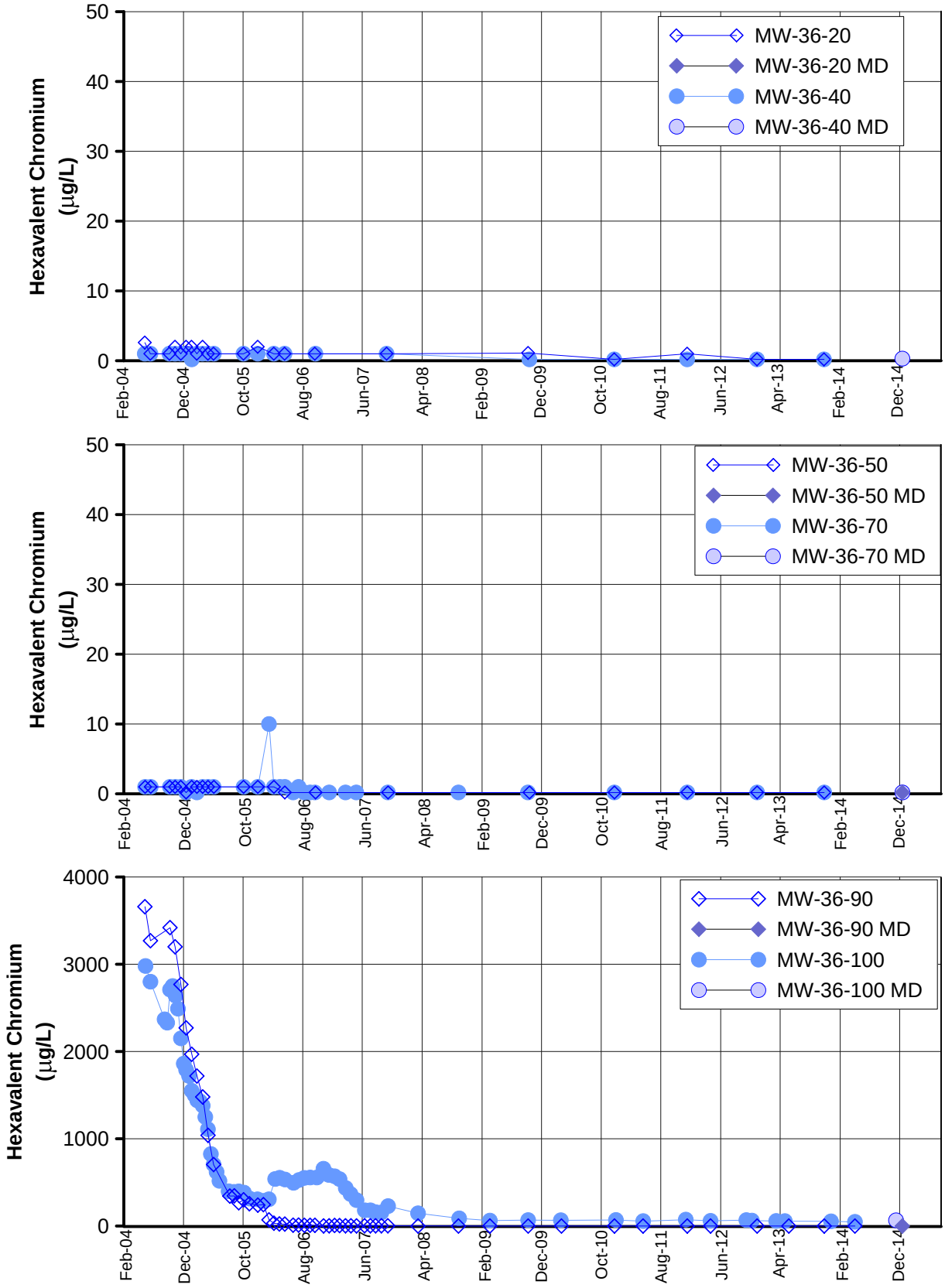
Notes:

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.

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-6
HEXAVALENT CHROMIUM
IN MW-34 AND MW-35 CLUSTERS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

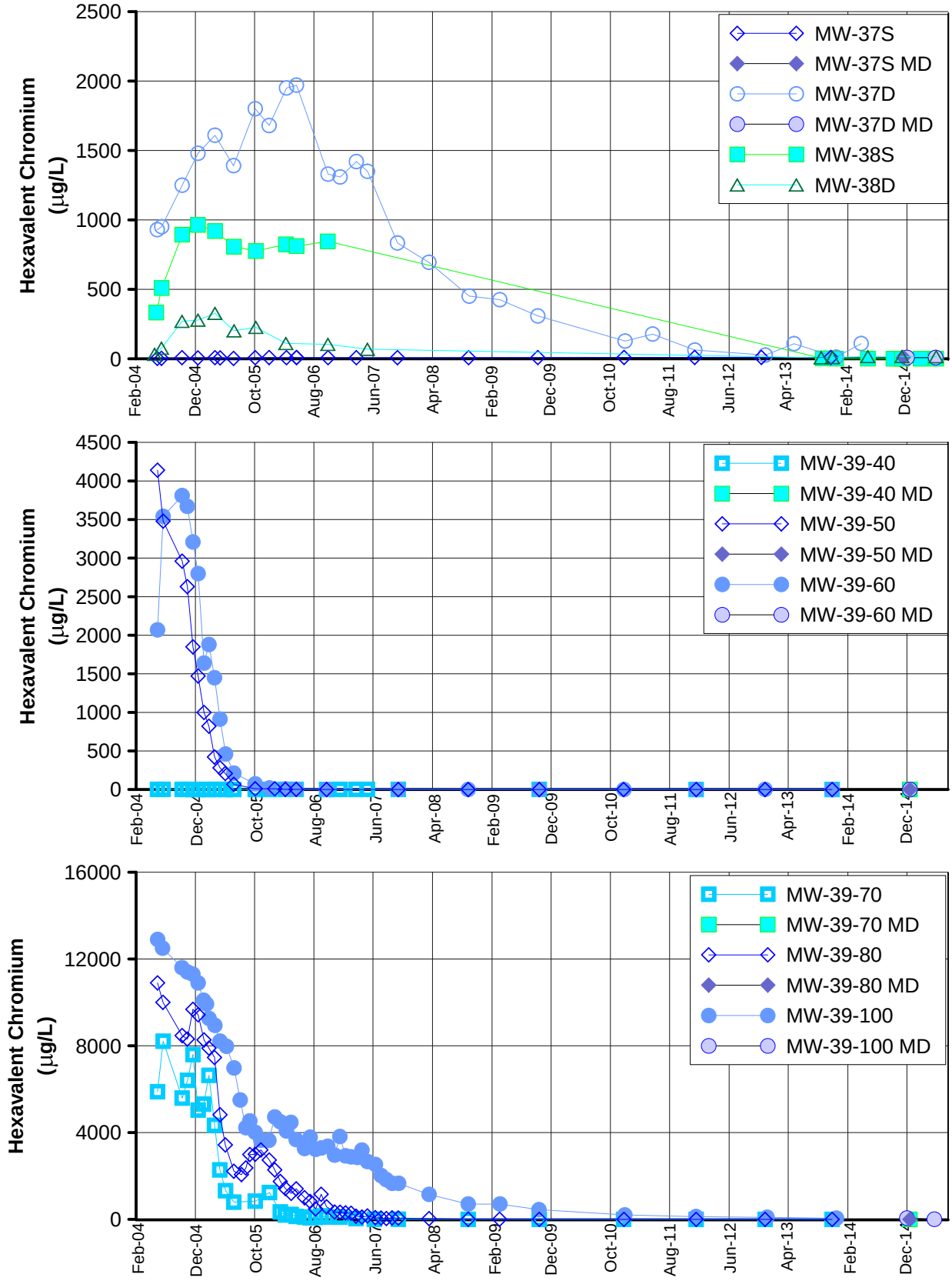


Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-36-70 is 20 µg/L.

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-7
HEXAVALENT CHROMIUM
IN MW-36 CLUSTER
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

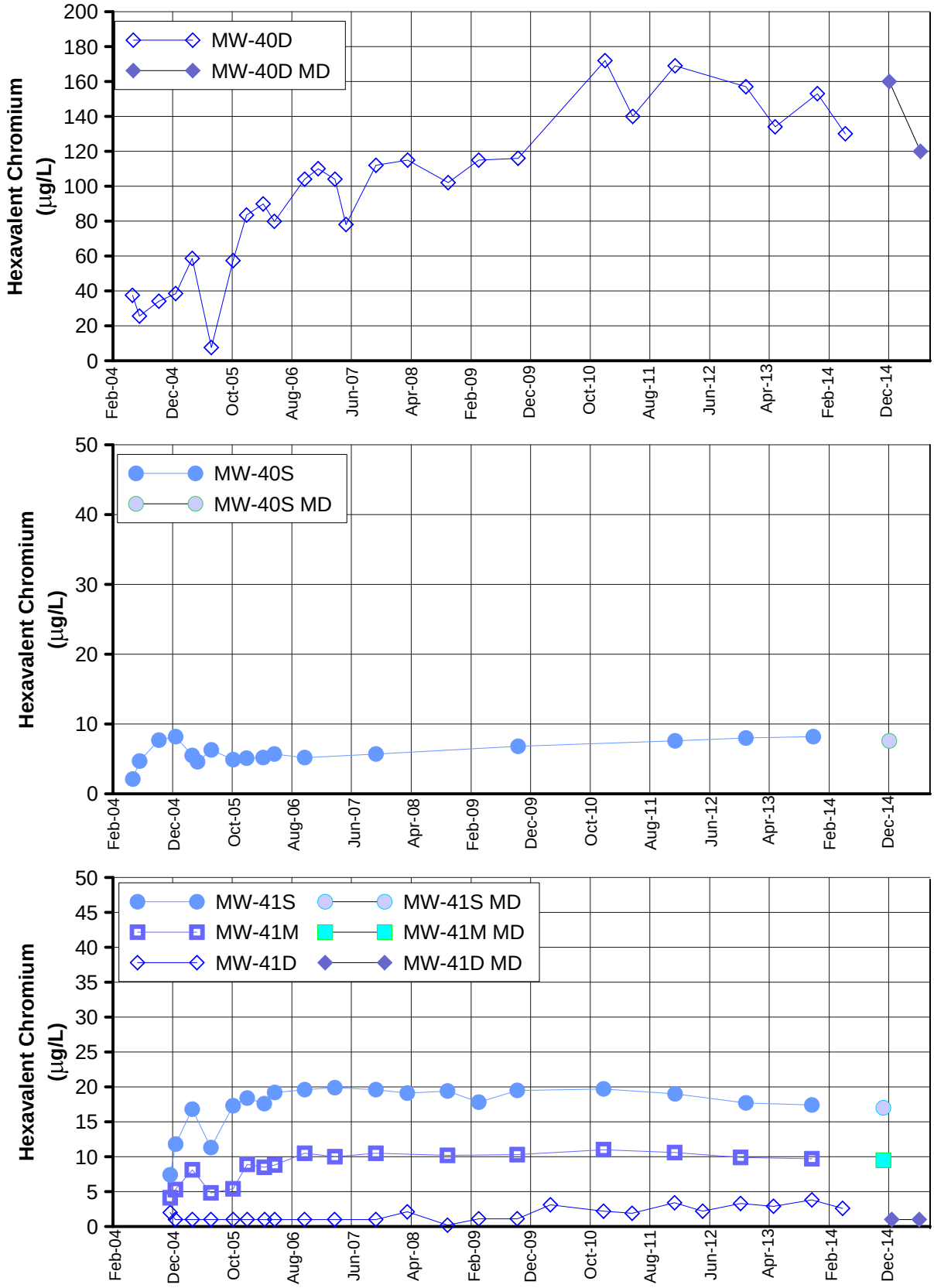
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-39-40 is 20 µg/L.
3) For MW-38 data from July 2007 - January 2010, please see: ARCADIS. 2014. *2014 Annual Monitoring Report for the Upland Reductive Zone In-Situ Pilot Test*. November 19.

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-8
HEXAVALENT CHROMIUM
IN MW-37, MW-38, AND MW-39 CLUSTERS

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

CH2MHILL

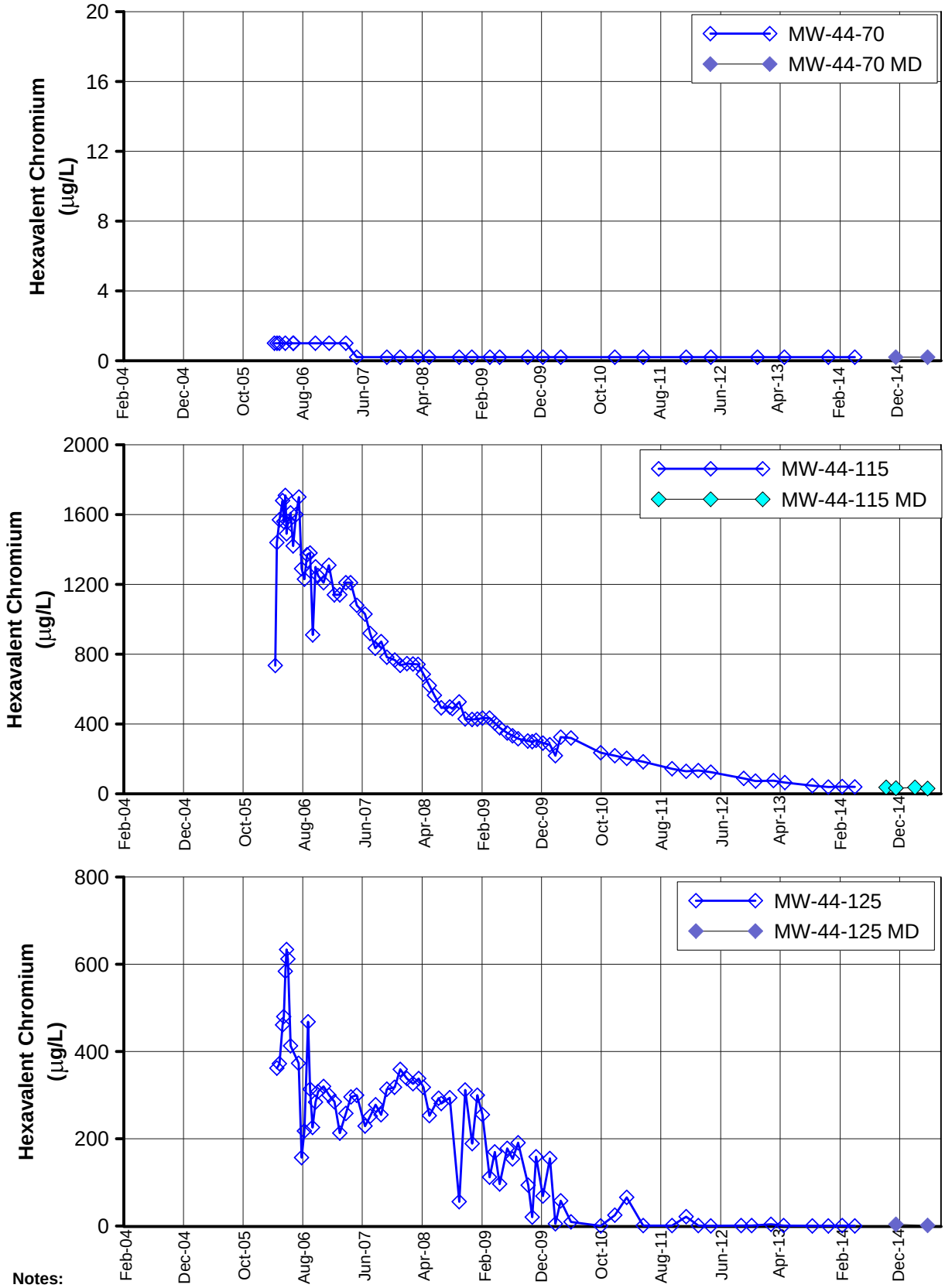


Notes:

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-9
HEXAVALENT CHROMIUM
IN MW-40 AND MW-41 CLUSTERS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

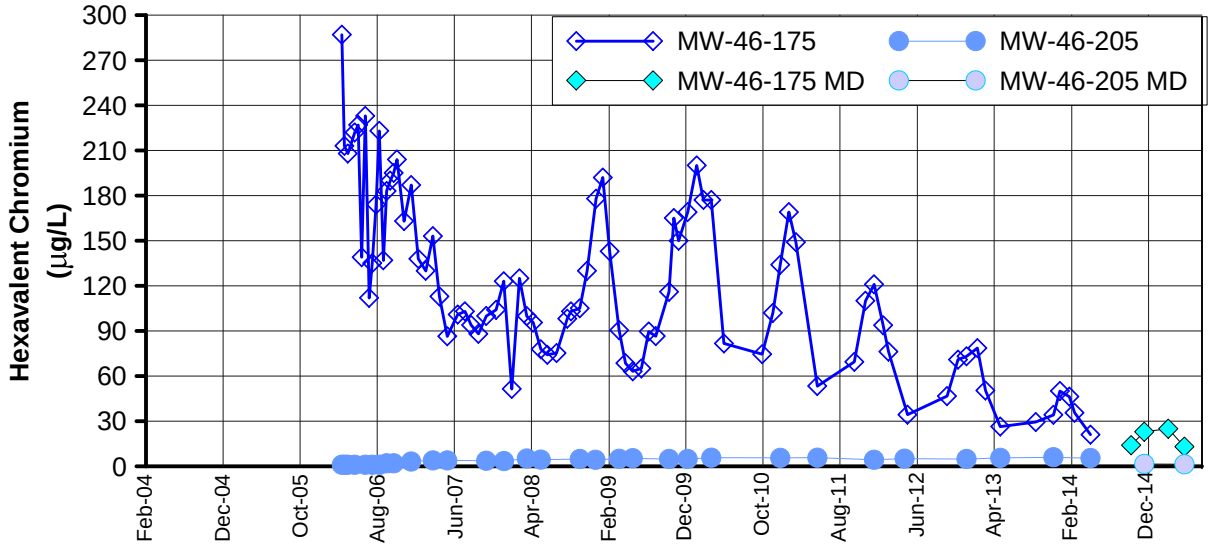
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-44-70 is 20 µg/L.
3) The trigger level for MW-44-115 is 1,200 µg/L.
4) The trigger level for MW-44-125 is 475 µg/L.

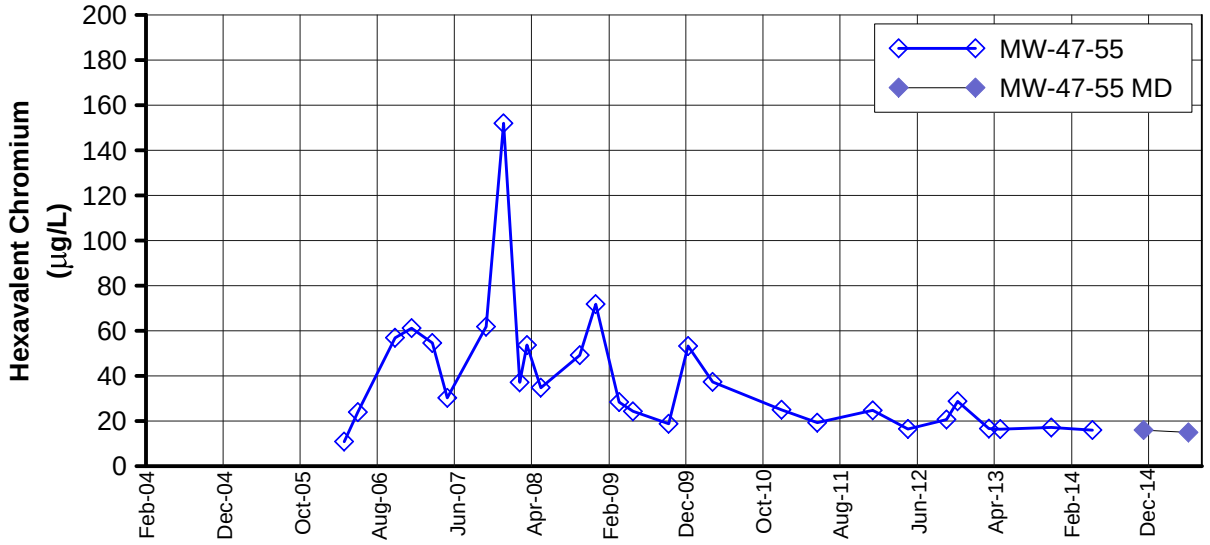
MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

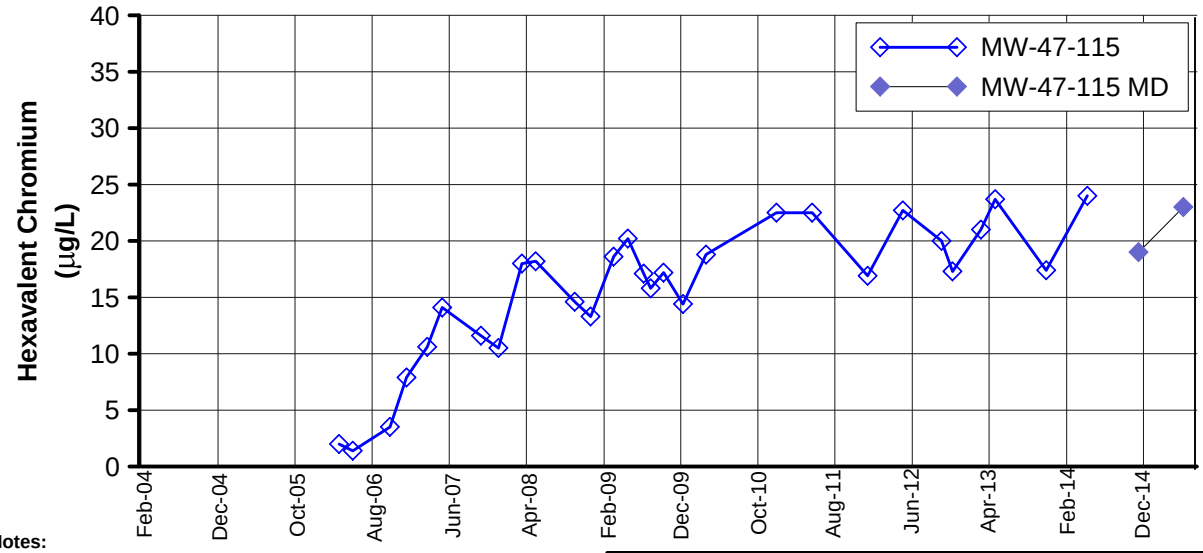
FIGURE D-10
HEXAVALENT CHROMIUM
IN MW-44 CLUSTER

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

CH2MHILL







Notes:

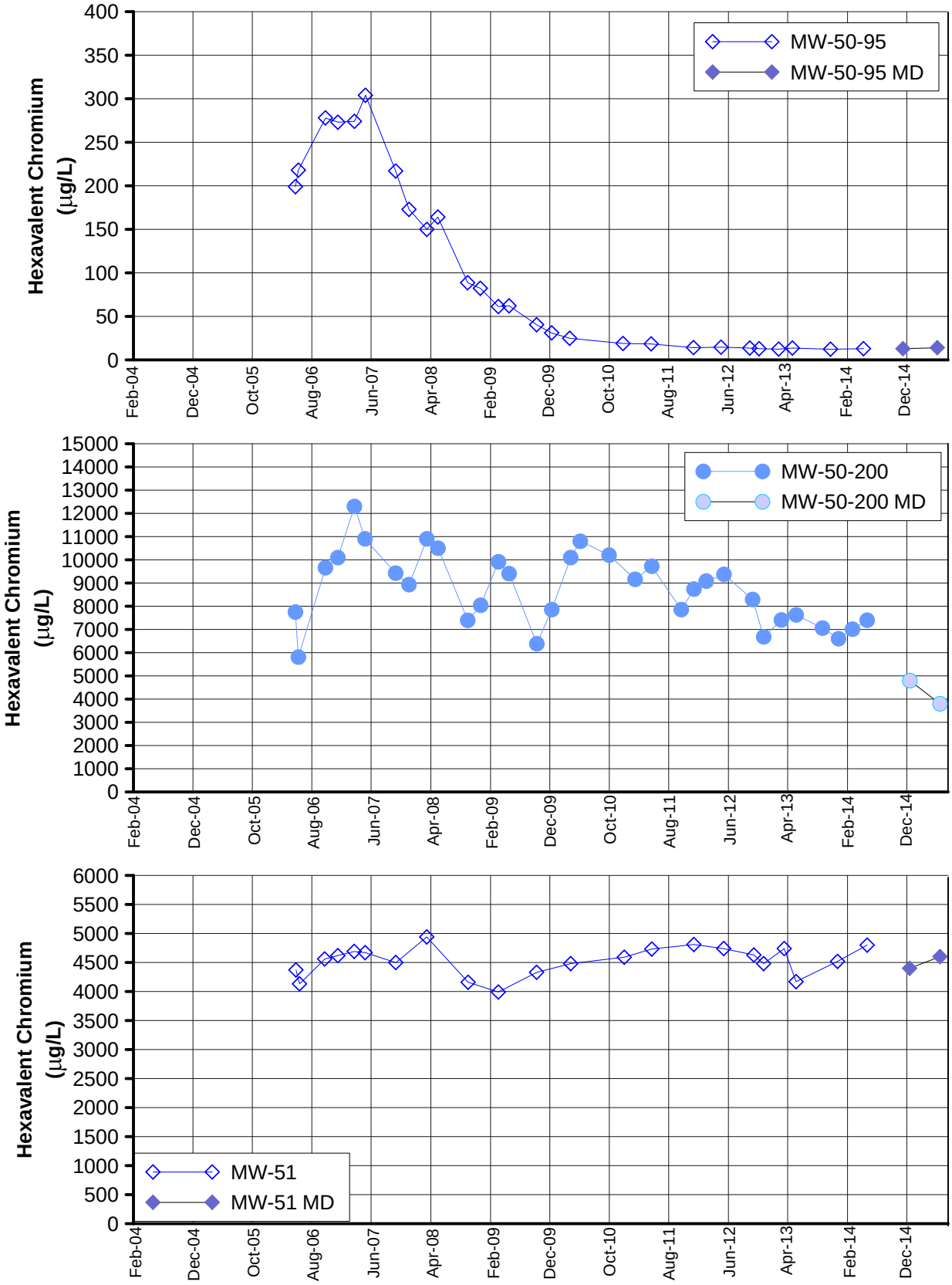
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-46-175 is 225 µg/L.
3) The trigger level for MW-46-205 is 20 µg/L.
4) The trigger level for MW-47-55 is 475 µg/L.
5) The trigger level for MW-47-115 is 31 µg/L.

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-11
HEXAVALENT CHROMIUM
IN MW-46 AND MW-47 CLUSTERS

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

CH2MHILL

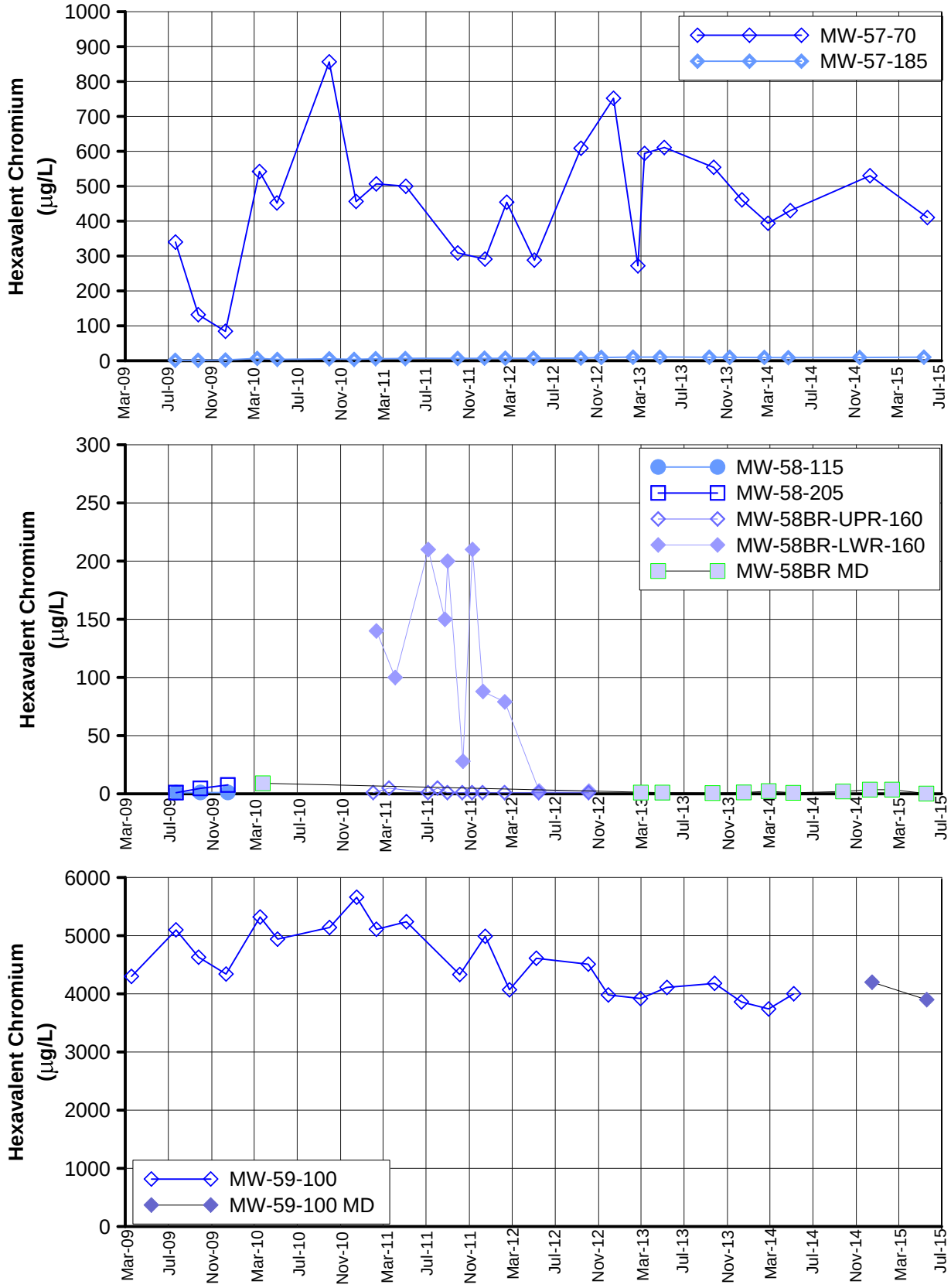


Notes:

MD = mnimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-12
HEXAVALENT CHROMIUM
IN MW-50 AND MW-51 CLUSTERS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

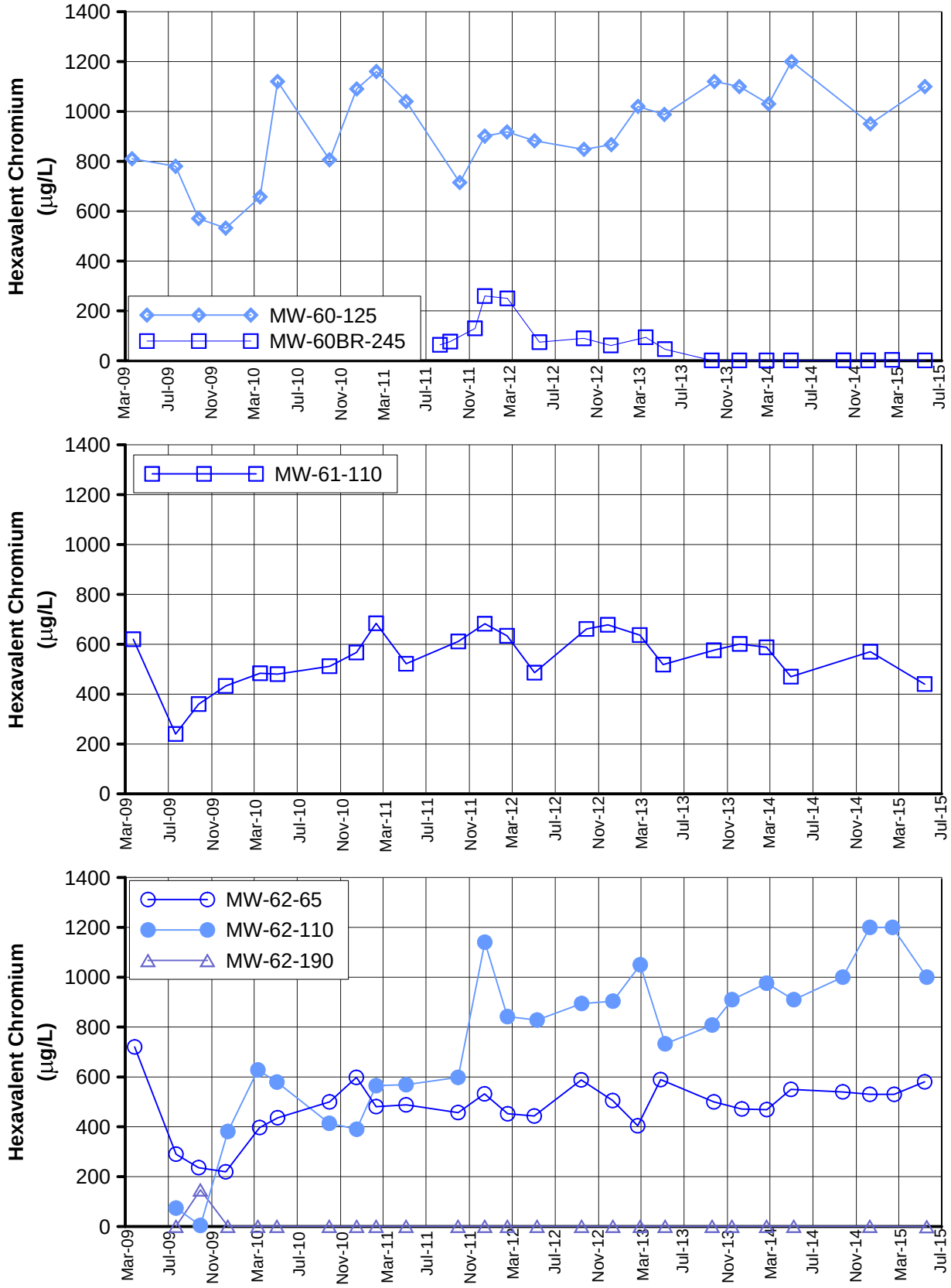


Note:

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) 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
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

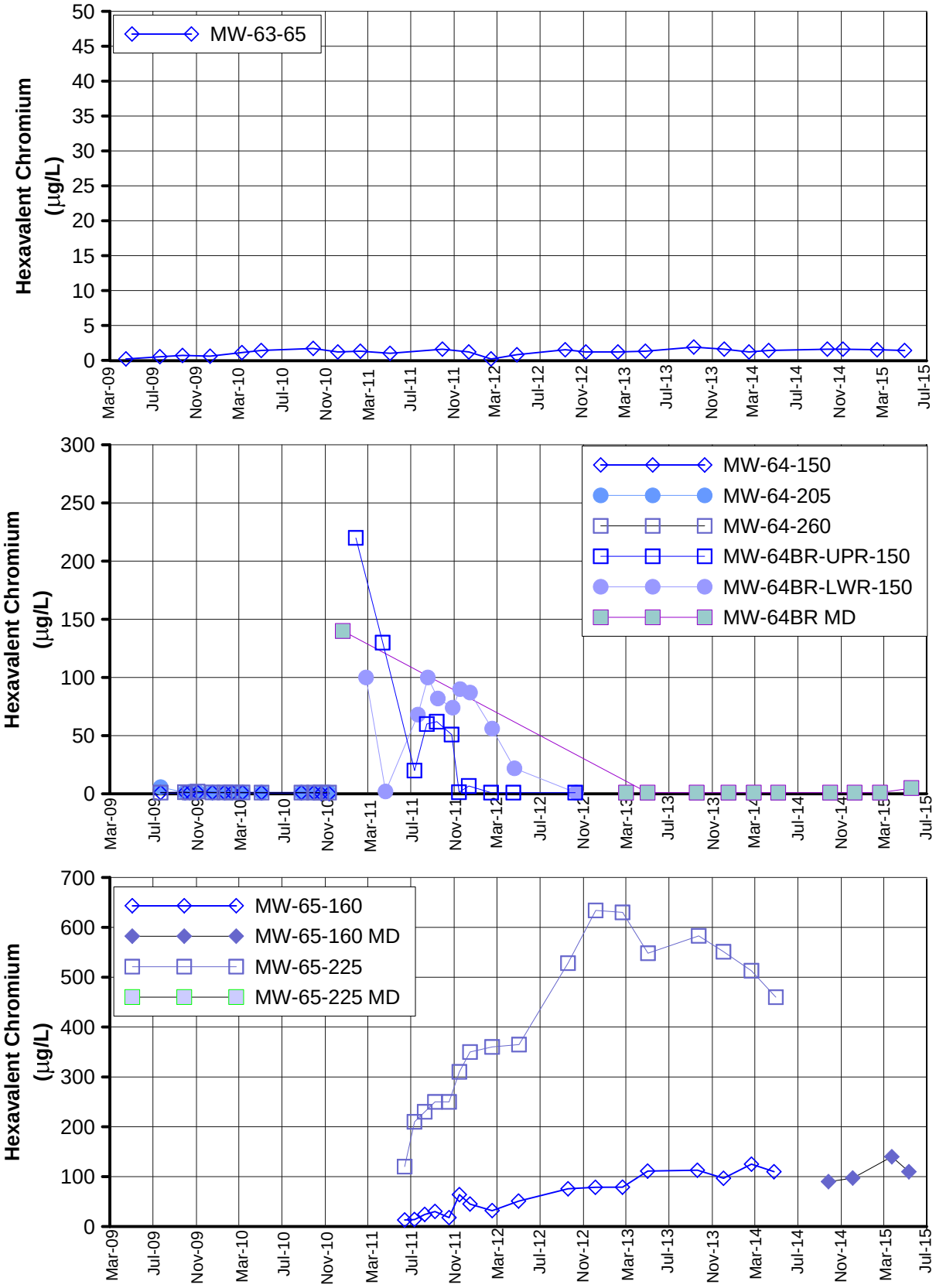
CH2MHILL



Notes:
1) MW-62-110 and MW-62-190 are sampled by flexible liner underground technologies sampling system.

FIGURE D-14
HEXAVALENT CHROMIUM IN THE MW-60 CLUSTER, MW-61-110 AND THE MW-62 CLUSTER
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

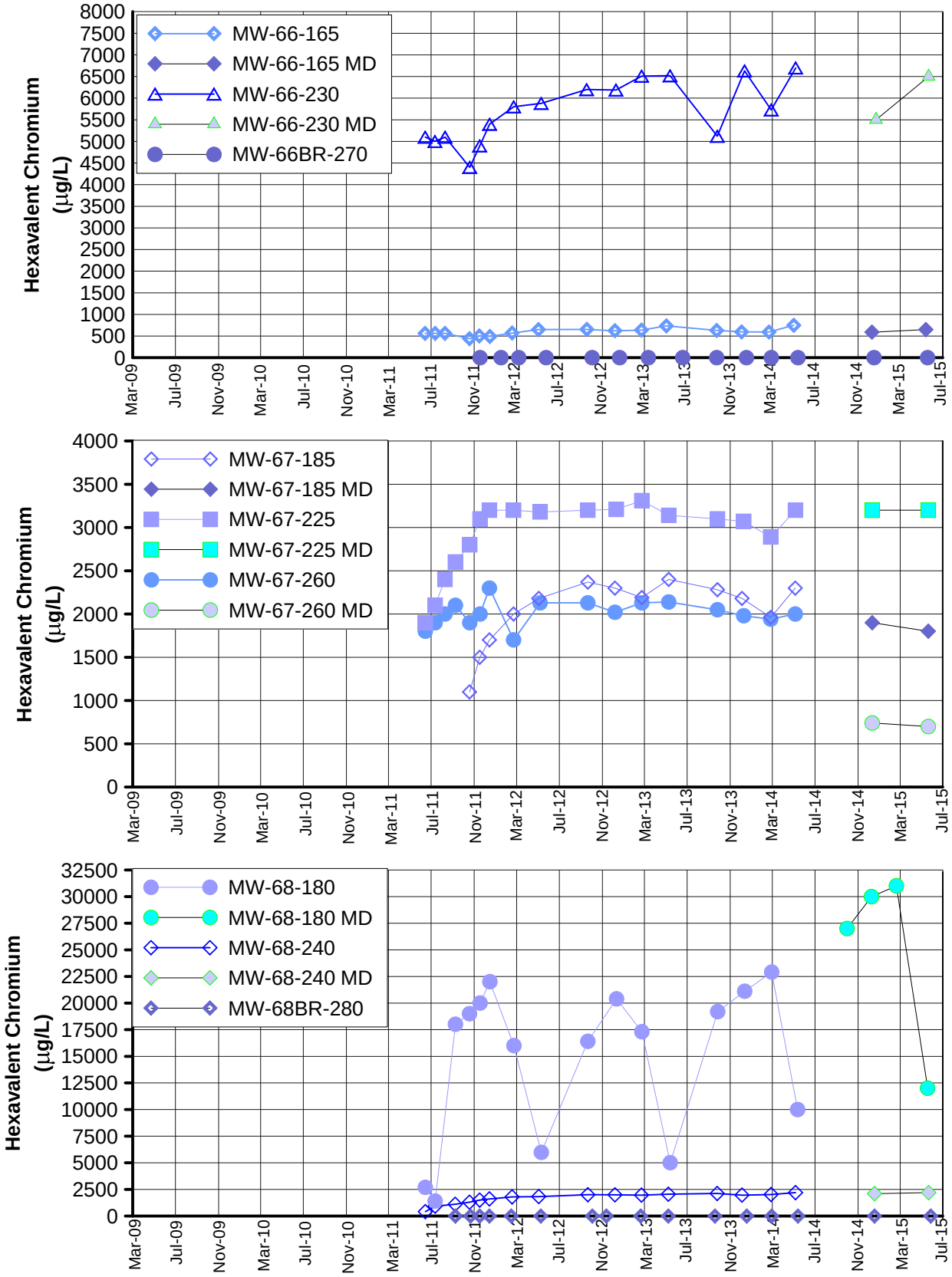


Notes:

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) 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
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

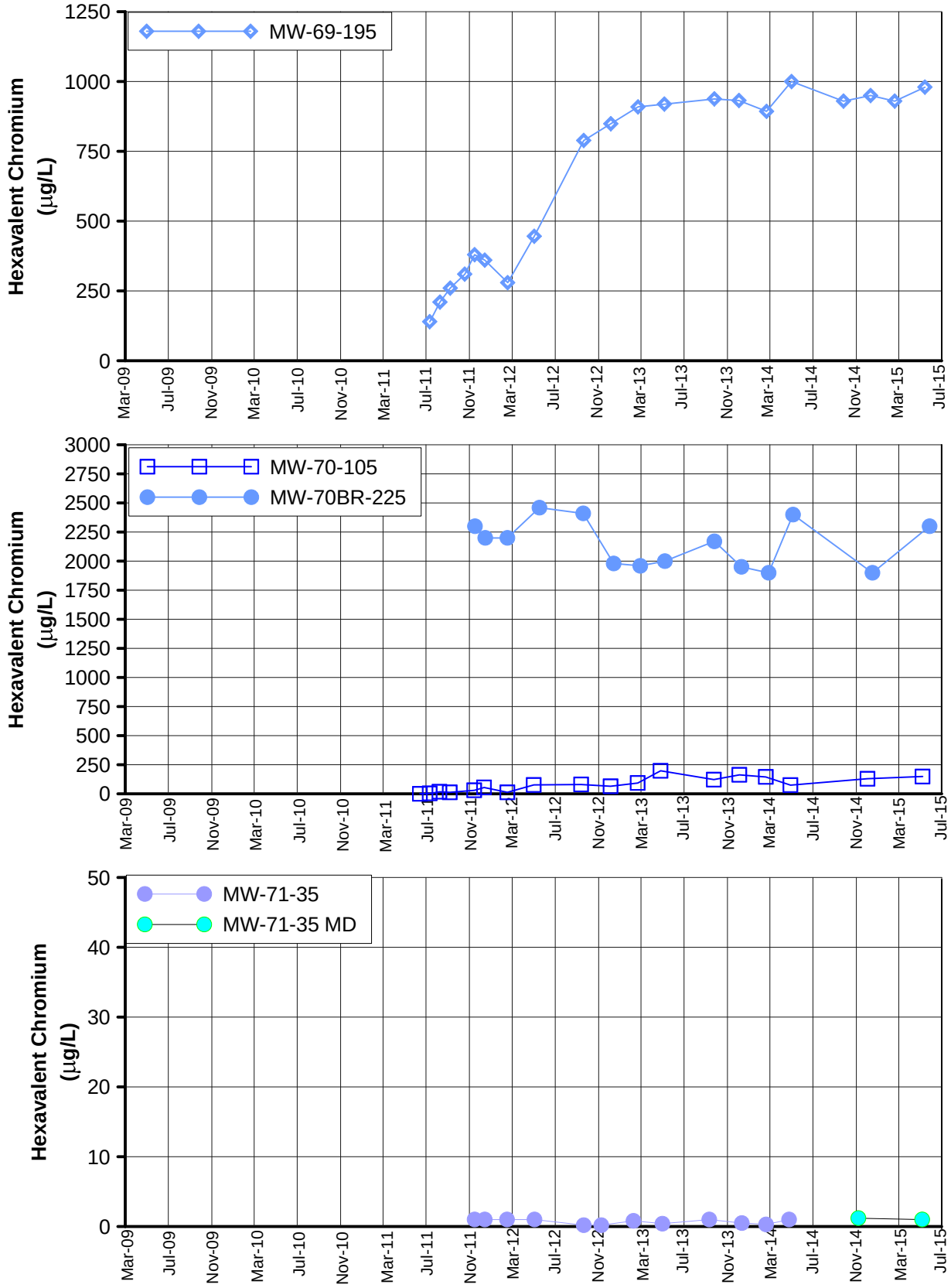


Notes:

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) was collected using the three-volume purge sampling method.

FIGURE D-16
HEXAVALENT CHROMIUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Notes:

MD = minimal drawdown, hexavalent chromium sample collected using minimal drawdown sampling method. Data not indicated with (MD) 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
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

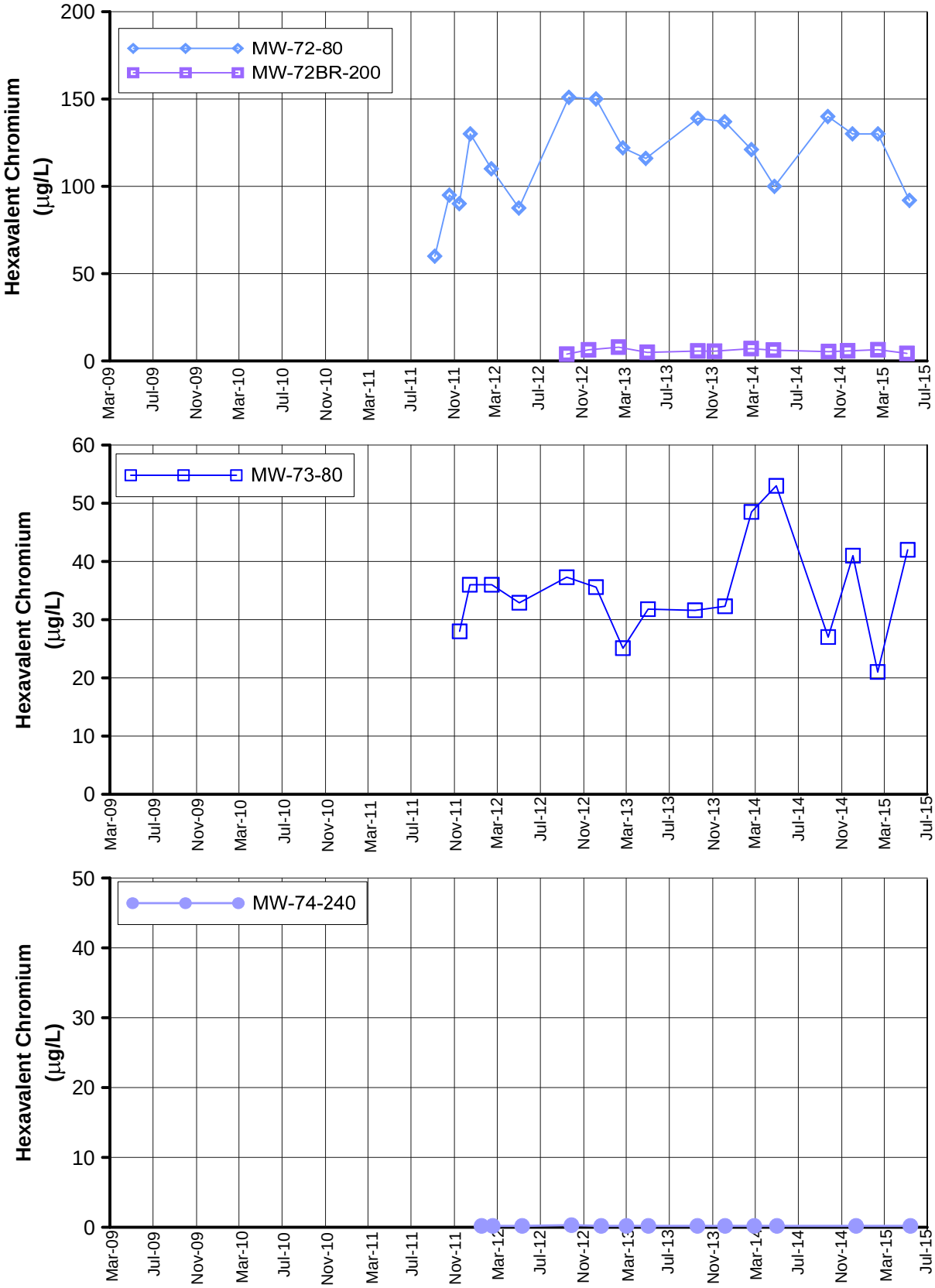


FIGURE D-18
HEXAVALENT CHROMIUM
IN MW-72 CLUSTER, MW-73-80, AND MW-74-240
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

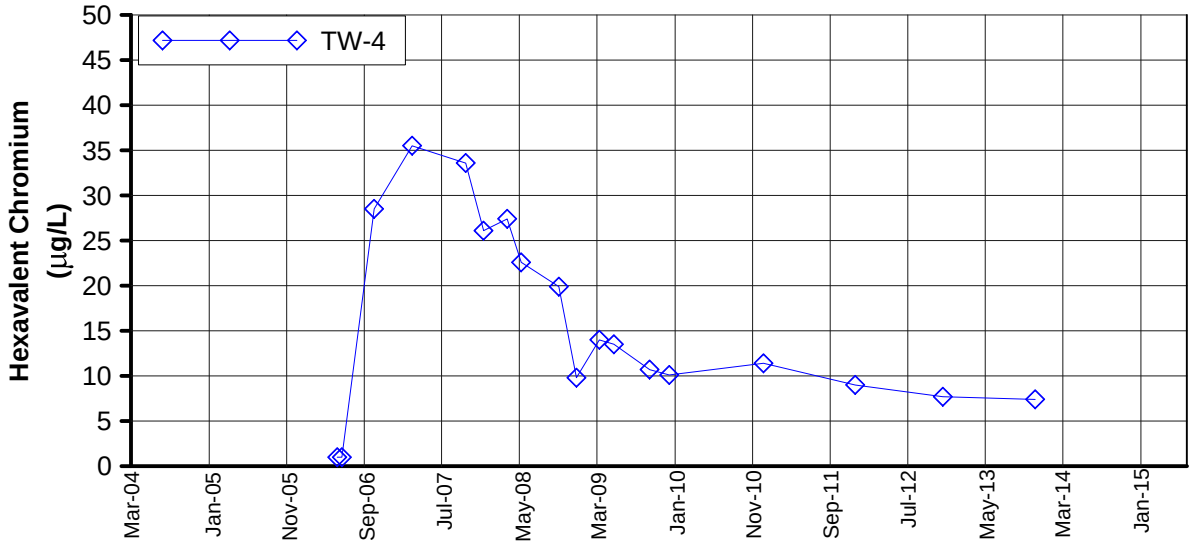


FIGURE D-19
HEXAVALENT CHROMIUM
IN TW-4
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

Appendix E
Interim Measures Extraction System Operations Log, Second Quarter 2015

APPENDIX E

Interim Measures Extraction System Operations Log, Second Quarter 2015, PG&E Topock Performance Monitoring Program

During Second Quarter 2015 (April through June), 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 was operated for a brief time on May 3, 2015 for well rehabilitation. Extraction well TW-2S did not operate during Second Quarter 2015. The operational run time for the Interim Measure (IM) groundwater extraction system (combined or individual pumping) was approximately 91.1 percent during Second Quarter 2015.

The IM Number 3 (IM-3) facility treated approximately 16,152,830 gallons of extracted groundwater during Second Quarter 2015. The IM-3 facility also treated 970 gallons of water generated from the groundwater monitoring program, 54,050 gallons of injection well development water, and 15,000 gallons of water from application of AquaGuard to extraction wells TW-2D and TW-3D during the April/May 2015 semi-annual scheduled maintenance event. Five 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 8.9 percent of downtime during Second 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 April 2015

- **April 1, 2015 (planned):** The extraction well system was offline from 9:50 a.m. until 10:08 a.m. to collect monthly influent and effluent samples. Extraction system downtime was 18 minutes.
- **April 2, 2015 (planned):** The extraction well system was offline from 8:42 a.m. until 9:20 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 38 minutes.
- **April 4, 2015 (unplanned):** The extraction well system was offline from 12:10 a.m. until 1:22 a.m. to repair the level sensor in the Secondary RO Feed Tank (T-2601). Extraction system downtime was 1 hour, 12 minutes.
- **April 6, 2015 (unplanned):** The extraction well system was offline from 3:46 p.m. until 5:16 p.m. to replace the microfilter strainer. Extraction system downtime was 1 hour, 30 minutes.
- **April 11, 2015 (unplanned):** The extraction well system was offline from 9:52 a.m. until 10:00 a.m. due to a high level alarm in the raw water storage tank (T-100). Extraction system downtime was 8 minutes.
- **April 13, 2015 (unplanned):** The extraction well system was offline from 8:36 a.m. until 3:30 p.m. to replace the microfilter modules and remove a blockage in the chemical loop. Extraction system downtime was 6 hours, 54 minutes.
- **April 14, 2015 (planned):** The extraction well system was offline from 9:16 a.m. until 9:40 a.m. due to a high level alarm in the Pretreated Water Tank (T-500). Extraction system downtime was 24 minutes.
- **April 15, 2015 (unplanned):** The extraction well system was offline from 7:50 p.m. until 9:14 p.m. due to high level alarms in the Pretreated Water Tank (T-500), the RO Feed Tank (T-600), and the Raw Water Storage Tank (T-100). Extraction system downtime was 1 hour, 24 minutes.

- **April 16, 2015 (unplanned):** The extraction well system was offline from 1:48 a.m. until 12:16 p.m. due to a malfunction in the microfilter system. Extraction system downtime was 10 hours, 28 minutes.
- **April 20, 2015 (unplanned):** The extraction well system was offline from 5:02 p.m. until 5:26 p.m. and from 5:56 p.m. until 7:22 p.m. to clean the microfilter strainer and repair a broken microfilter piping connection. Extraction system downtime was 1 hour, 50 minutes.
- **April 25, 2015 (unplanned):** The extraction well system was offline from 2:32 p.m. until 5:12 p.m. and from 6:00 p.m. until 6:32 p.m. due to a malfunction in the microfilter system and cleaning of the microfilter strainer. Extraction system downtime was 3 hours, 12 minutes.
- **April 25-26, 2015 (unplanned):** The extraction well system was offline from 11:56 p.m. on April 25, 2015 until 1:04 a.m. on April 26, 2015 to diagnose a problem with the Post Treatment RO Permeate Pump (P-605). Extraction system downtime was 1 hour, 8 minutes.
- **April 26, 2015 (unplanned):** The extraction well system was offline from 11:26 a.m. until 11:28 a.m. due to loss of power from the City of Needles. Extraction system downtime was 2 minutes.
- **April 27, 2015 (unplanned):** The extraction well system was offline from 2:12 p.m. until 2:58 p.m. to replace the o-ring on the microfilter strainer. Extraction system downtime was 46 minutes.
- **April 27, 2015 (unplanned):** The extraction well system was offline from 8:54 p.m. until 9:56 p.m. and from 10:20 p.m. until 10:50 p.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 1 hour, 32 minutes.
- **April 28, 2015 (unplanned):** The extraction well system was offline from 12:40 a.m. until 12:48 a.m. to return the facility to power from the City of Needles. Extraction system downtime was 8 minutes.
- **April 28-30, 2015 (planned):** The extraction well system was offline from 9:10 a.m. on April 28, 2015 through 11:59 p.m. on April 30, 2015 for semiannual scheduled maintenance. Extraction system downtime was 2 days, 14 hours, and 50 minutes.

E.2 May 2015

- **May 1-4, 2015 (planned):** The extraction well system was offline from 12:00 a.m. on May 1, 2015 through 10:16 a.m. on May 4, 2015 for semiannual scheduled maintenance. Extraction wells TW-2D and TW-3D underwent rehabilitation during this time, and water was pumped from the wells for a combined 3 hours, 26 minutes during this work. Extraction system downtime was 3 days, 6 hours, and 50 minutes.
- **May 4, 2015 (planned):** The extraction well system was offline from 12:22 p.m. until 12:32 p.m. due to loss of power from the City of Needles. Extraction system downtime was 10 minutes.
- **May 7, 2015 (unplanned):** The extraction well system was offline from 3:06 p.m. until 3:10 p.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 4 minutes.
- **May 7, 2015 (unplanned):** The extraction well system was offline from 9:34 p.m. until 9:42 p.m., from 9:48 p.m. until 9:50 p.m., and from 9:54 p.m. until 10:06 p.m. to return the facility to power from the City of Needles. Extraction system downtime was 22 minutes.
- **May 9, 2015 (unplanned):** The extraction well system was offline from 4:48 a.m. until 6:08 a.m. due to the failure of the ferrous flow meter. Extraction system downtime was 1 hour, 20 minutes.

- **May 9, 2015 (planned):** The extraction well system was offline from 11:14 a.m. until 11:16 a.m., from 11:26 a.m. until 11:28 a.m., and from 11:30 a.m. until 11:32 a.m. due to testing of critical alarms and the leak detection system. Extraction system downtime was 6 minutes.
- **May 9, 2015 (unplanned):** The extraction well system was offline from 5:40 p.m. until 9:18 p.m. due to the failure of the ferrous flow meter. Extraction system downtime was 3 hours, 38 minutes.
- **May 14, 2015 (unplanned):** The extraction well system was offline from 3:18 p.m. until 3:26 p.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 8 minutes.
- **May 14, 2015 (unplanned):** The extraction well system was offline from 6:14 p.m. until 7:26 p.m. to return the facility to power from the City of Needles. Extraction system downtime was 1 hour, 12 minutes.
- **May 21, 2015 (unplanned):** The extraction well system was offline from 11:08 a.m. until 11:14 a.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 6 minutes.
- **May 21, 2015 (unplanned):** The extraction well system was offline from 2:22 p.m. until 2:30 p.m. to return the facility to power from the City of Needles. Extraction system downtime was 8 minutes.
- **May 26, 2015 (unplanned):** The extraction well system was offline from 1:22 p.m. until 1:42 p.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 20 minutes.
- **May 26, 2015 (unplanned):** The extraction well system was offline from 4:36 p.m. until 4:42 p.m. to return the facility to power from the City of Needles. Extraction system downtime was 6 minutes.
- **May 31, 2015 (unplanned):** The extraction well system was offline from 6:56 a.m. until 12:02 p.m. to change the microfilter modules and replace the breaker in the Post Treatment RO Permeate Pump (P-605). Extraction system downtime was 5 hours, 6 minutes.

E.3 June 2015

- **June 1, 2015 (unplanned):** The extraction well system was offline from 4:18 a.m. until 4:20 a.m. due to loss of power from the City of Needles. Extraction system downtime was 2 minutes.
- **June 1, 2015 (unplanned):** The extraction well system was offline from 11:56 a.m. until 1:02 p.m. due to a high level alarm in the raw water storage tank (T-100). Extraction system downtime was 1 hour, 14 minutes.
- **June 8, 2015 (planned):** The extraction well system was offline from 1:00 p.m. until 1:02 pm, from 1:04 p.m. until 1:08 pm, from 1:10 p.m. until 1:14 pm, from 1:16 p.m. until 1:18 pm, and from 1:22 p.m. until 1:24 p.m. due to testing of critical alarms and the leak detection system. Extraction system downtime was 14 minutes.
- **June 13, 2015 (unplanned):** The extraction well system was offline from 4:06 p.m. until 4:50 p.m. due to loss of power from the City of Needles. Extraction system downtime was 44 minutes.
- **June 14, 2015 (unplanned):** The extraction well system was offline from 3:44 p.m. until 4:38 p.m. due to the failure of the air compressor. Extraction system downtime was 54 minutes.
- **June 14, 2015 (unplanned):** The extraction well system was offline from 9:46 p.m. until 10:20 p.m. due to the failure of the air compressor. Extraction system downtime was 34 minutes.

- **June 15, 2015 (unplanned):** The extraction well system was offline from 12:24 a.m. until 1:30 a.m. due to the failure of the air compressor. Extraction system downtime was 1 hour, 6 minutes.
- **June 15, 2015 (unplanned):** The extraction well system was offline from 5:54 a.m. until 8:00 a.m. due to the failure of the air compressor. Extraction system downtime was 2 hours, 6 minutes.
- **June 27, 2015 (unplanned):** The extraction well system was offline from 1:44 p.m. until 3:36 p.m. due to a high level alarm in the raw water storage tank (T-100). Extraction system downtime was 1 hour, 52 minutes.
- **June 28, 2015 (unplanned):** The extraction well system was offline from 4:40 p.m. until 4:46 p.m. due to loss of power from the City of Needles. Extraction system downtime was 6 minutes.

Appendix F
Hydraulic Data for Interim Measures Reporting Period

TABLE F-1

Average Monthly and Quarterly Groundwater Elevations, Second Quarter 2015

Second 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	April 2015	May 2015	June 2015	Quarter Average	Days in Quarter Average
I-3	River Station	456.28	456.28	456.28	456.28	91
MW-20-070	Shallow Zone	454.94	454.94	454.94	454.94	91
MW-20-100	Middle Zone	454.49	454.49	454.49	454.49	90
MW-20-130	Deep Zone	454.13	454.13	454.13	454.13	91
MW-22	Shallow Zone	455.63	455.63	455.63	455.63	91
MW-25	Shallow Zone	456.20	456.20	456.20	456.20	91
MW-26	Shallow Zone	455.86	455.86	455.86	455.86	91
MW-27-020	Shallow Zone	456.21	456.21	456.21	456.21	91
MW-27-060	Middle Zone	456.14	456.14	456.14	456.14	91
MW-27-085	Deep Zone	456.18	456.18	456.18	456.18	91
MW-28-025	Shallow Zone	456.19	456.19	456.19	456.19	91
MW-28-090	Deep Zone	456.20	456.20	456.20	456.20	91
MW-30-050	Middle Zone	455.88	455.88	455.88	455.88	91
MW-31-060	Shallow Zone	455.80	455.80	455.80	455.80	91
MW-31-135	Deep Zone	455.18	455.18	455.18	455.18	91
MW-32-035	Shallow Zone	456.00	456.00	456.00	456.00	91
MW-33-040	Shallow Zone	456.06	456.06	456.06	456.06	91
MW-33-090	Middle Zone	456.26	456.26	456.26	456.26	91
MW-33-150	Deep Zone	456.13	456.13	456.13	456.13	91
MW-34-055	Middle Zone	456.19	456.19	456.19	456.19	91
MW-34-080	Deep Zone	456.22	456.22	456.22	456.22	91
MW-34-100	Deep Zone	455.95	455.95	455.95	455.95	91
MW-35-060	Shallow Zone	456.57	456.57	456.57	456.57	91
MW-35-135	Deep Zone	INC	INC	456.64	INC	55
MW-36-020	Shallow Zone	455.95	455.95	455.95	455.95	91
MW-36-040	Shallow Zone	455.98	455.98	455.98	455.98	91
MW-36-050	Middle Zone	455.87	455.87	455.87	455.87	91
MW-36-070	Middle Zone	455.95	455.95	455.95	455.95	91
MW-36-090	Deep Zone	455.07	455.07	455.07	455.07	91
MW-36-100	Deep Zone	455.29	455.29	455.29	455.29	91
MW-39-040	Shallow Zone	455.75	455.75	455.75	455.75	91
MW-39-050	Middle Zone	455.60	455.60	455.60	455.60	91
MW-39-060	Middle Zone	455.41	455.41	455.41	455.41	91
MW-39-070	Middle Zone	454.97	454.97	454.97	454.97	91
MW-39-080	Deep Zone	455.07	455.07	455.07	455.07	91
MW-39-100	Deep Zone	455.48	455.48	455.48	455.48	91
MW-42-030	Shallow Zone	455.71	455.71	455.71	455.71	91
MW-42-065	Middle Zone	455.85	455.85	455.85	455.85	91
MW-43-025	Shallow Zone	456.26	456.26	456.26	456.26	91
MW-43-090	Deep Zone	456.58	456.58	456.58	456.58	91
MW-44-070	Middle Zone	456.03	456.03	456.03	456.03	91
MW-44-115	Deep Zone	455.55	455.55	455.55	455.55	91
MW-44-125	Deep Zone	456.11	456.11	456.11	456.11	91
MW-45-095a	Deep Zone	454.82	454.82	454.82	454.82	91
MW-46-175	Deep Zone	456.00	456.00	456.00	456.00	91
MW-47-055	Shallow Zone	456.39	456.39	456.39	456.39	91
MW-47-115	Deep Zone	456.39	456.39	456.39	456.39	91
MW-49-135	Deep Zone	INC	INC	456.26	INC	44

TABLE F-1

Average Monthly and Quarterly Groundwater Elevations, Second Quarter 2015

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

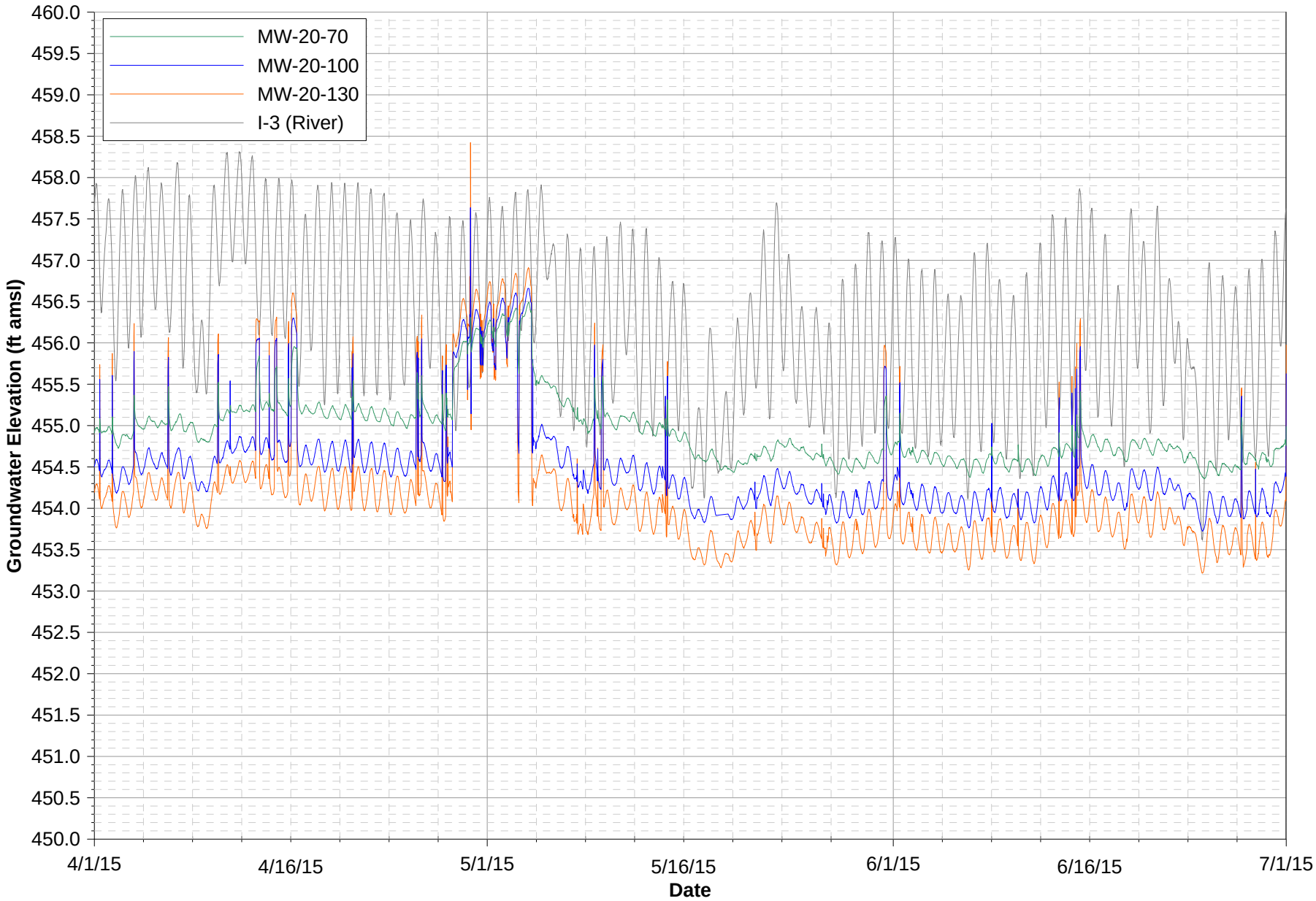
Well ID	Aquifer Zone	April 2015	May 2015	June 2015	Quarter Average	Days in Quarter Average
MW-50-095	Middle Zone	455.93	455.93	455.93	455.93	91
MW-51	Middle Zone	455.89	INC	INC	INC	49
MW-54-085	Deep Zone	456.57	456.57	456.57	456.57	90
MW-54-140	Deep Zone	456.69	456.69	456.69	456.69	90
MW-54-195	Deep Zone	456.85	456.85	456.85	456.85	90
MW-55-045	Middle Zone	456.81	456.81	456.81	456.81	89
MW-55-120	Deep Zone	456.73	456.73	456.73	456.73	89
PT2D	Deep Zone	454.83	454.83	454.83	454.83	91
PT5D	Deep Zone	455.35	455.35	455.35	455.35	91
PT6D	Deep Zone	455.34	455.34	455.34	455.34	91
RRB	River Station	456.73	456.73	INC	INC	63

NOTES:

Averages reported in ft amsl (feet above mean sea level).

Quarterly Average = average of daily averages over reporting period.

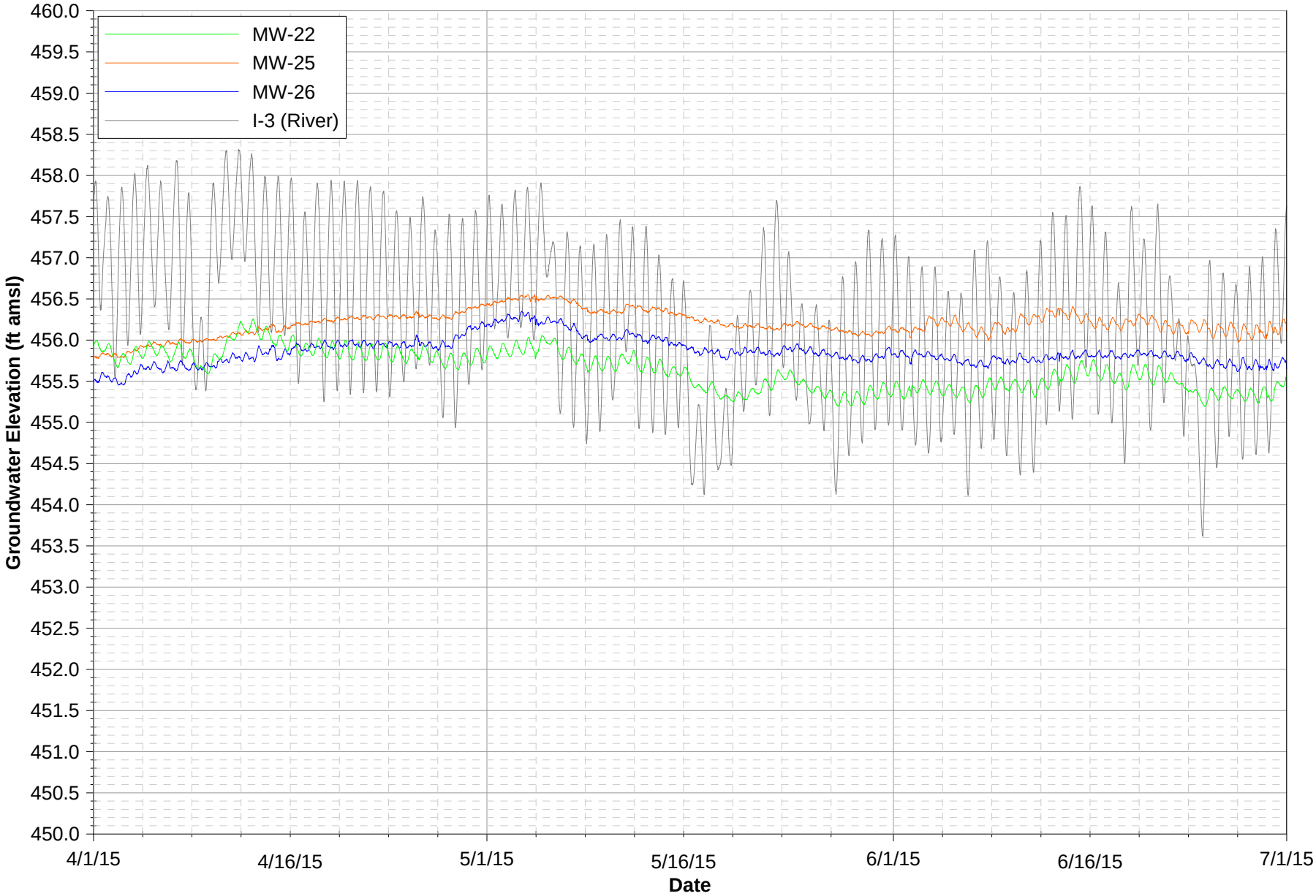
INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction.



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1A
MW-20 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

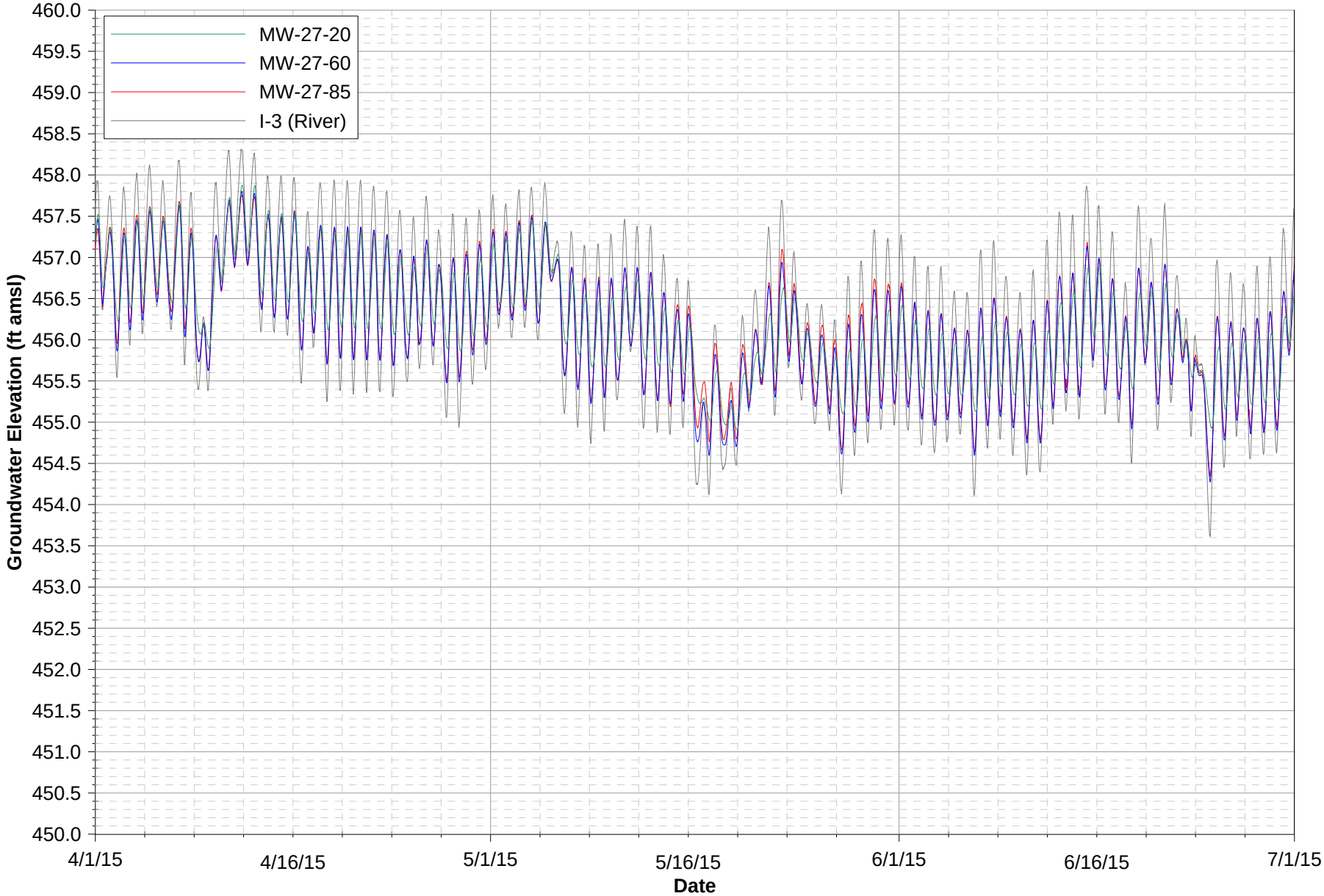
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1B
MW-22, MW-25, AND MW-26 HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

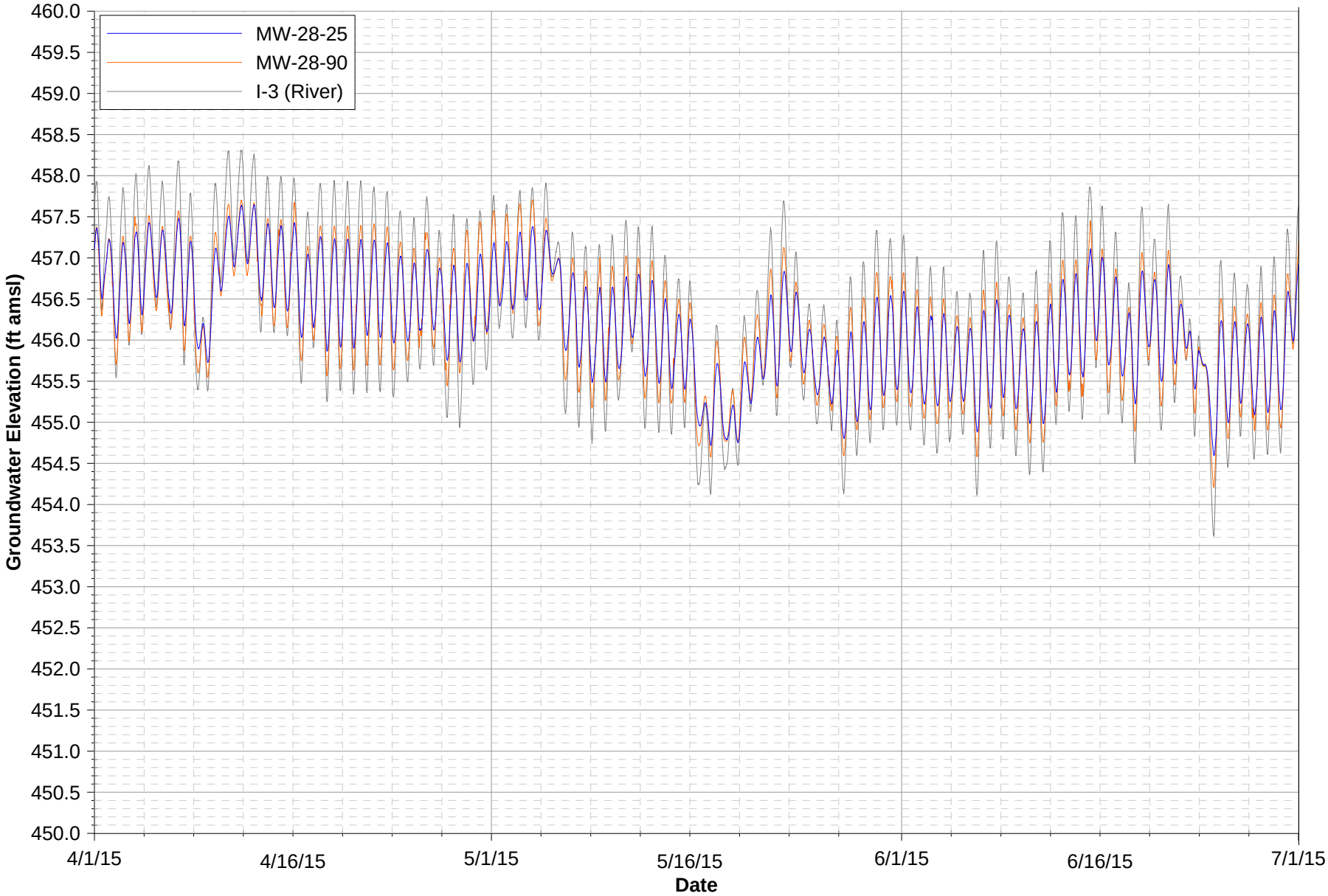
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1C
MW-27 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

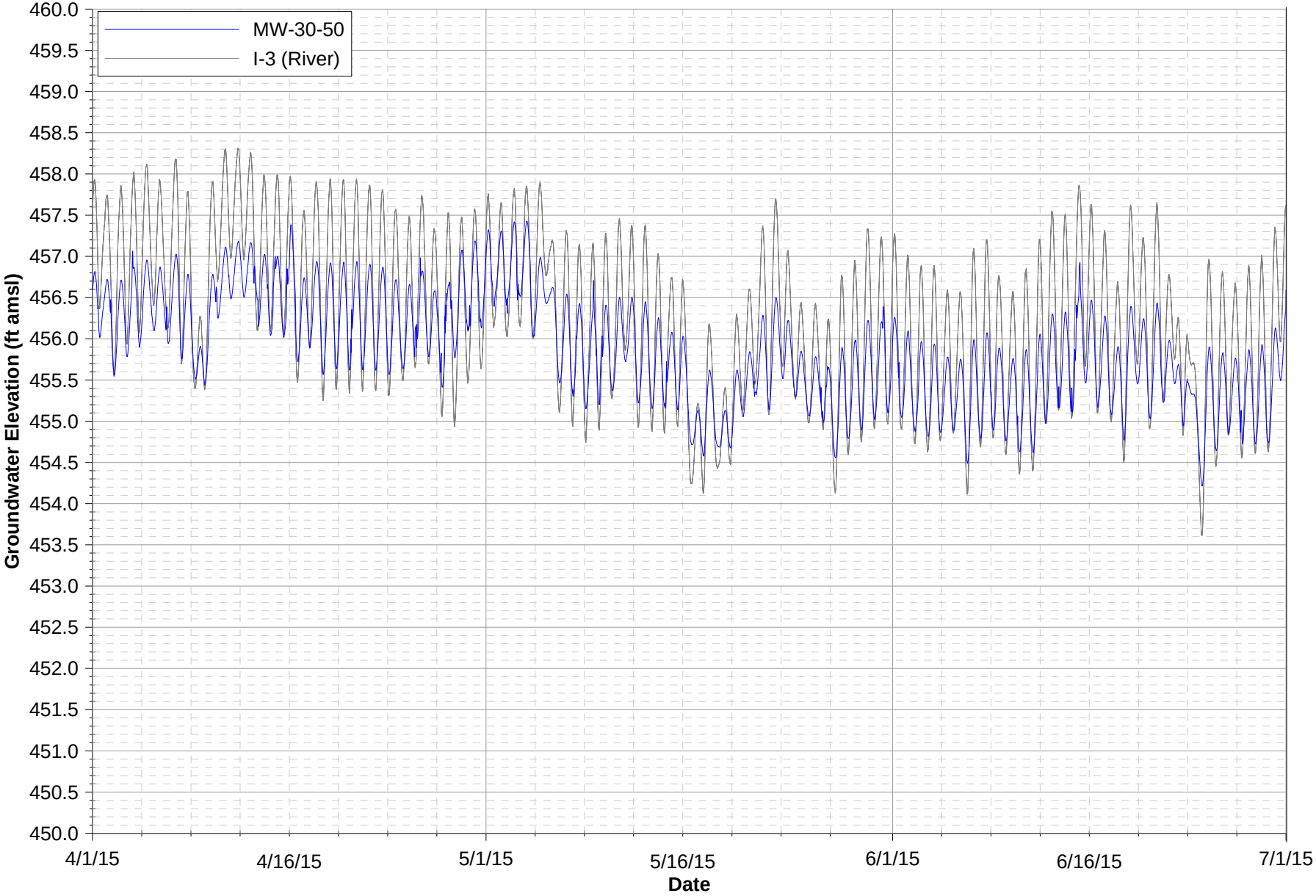
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1D
MW-28 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

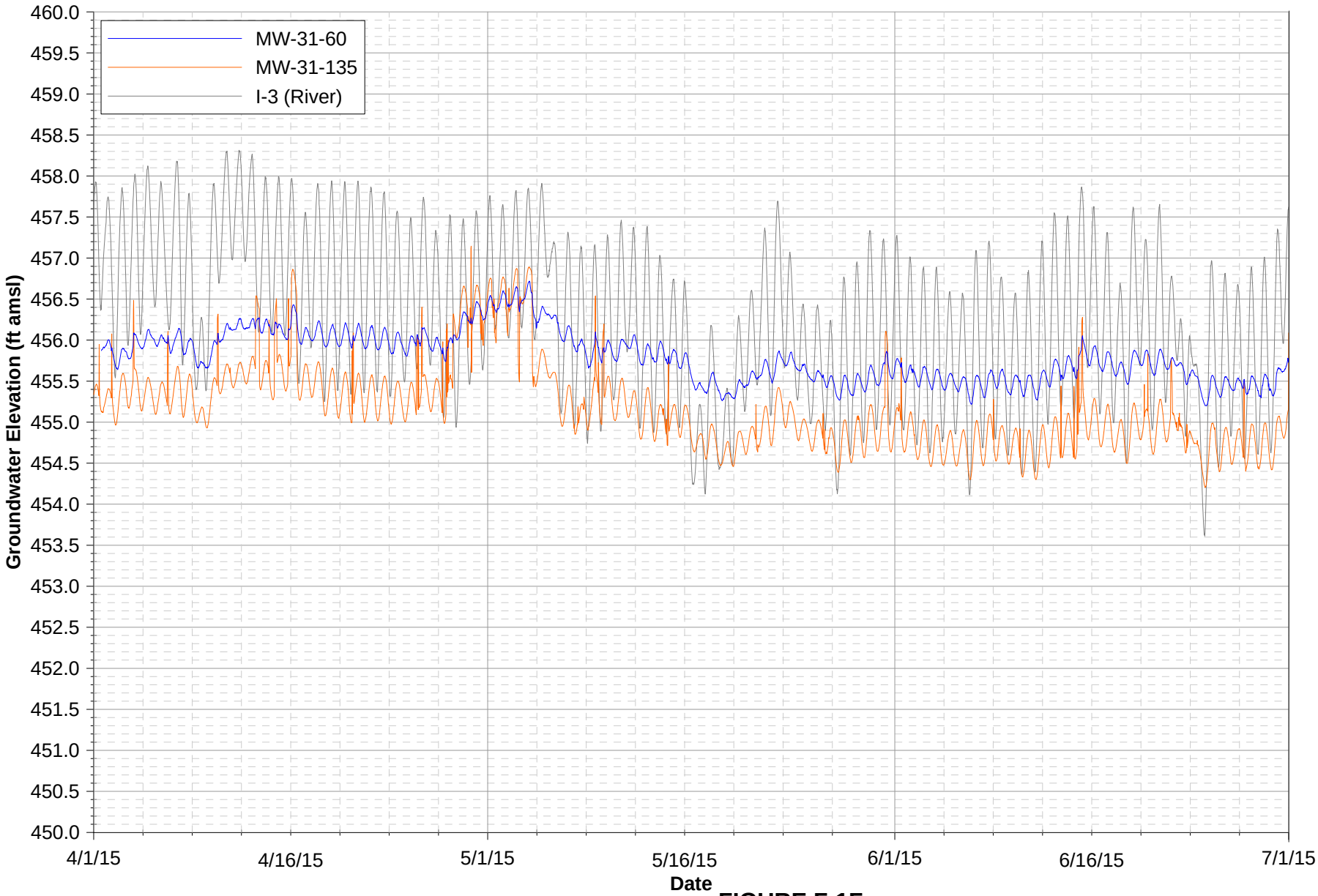
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1E
MW-30-50 HYDROGRAPH
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

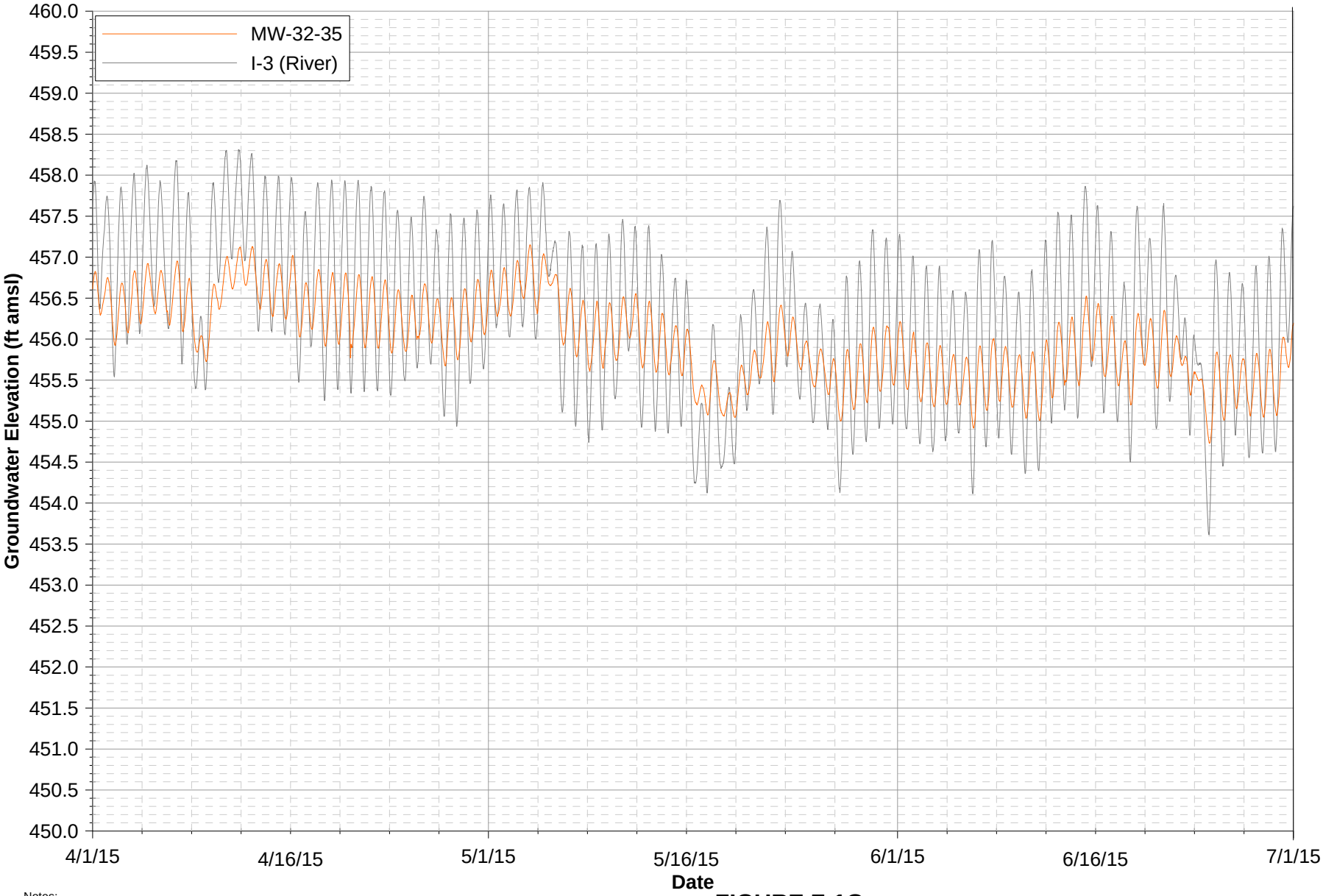
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1F
MW-31 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

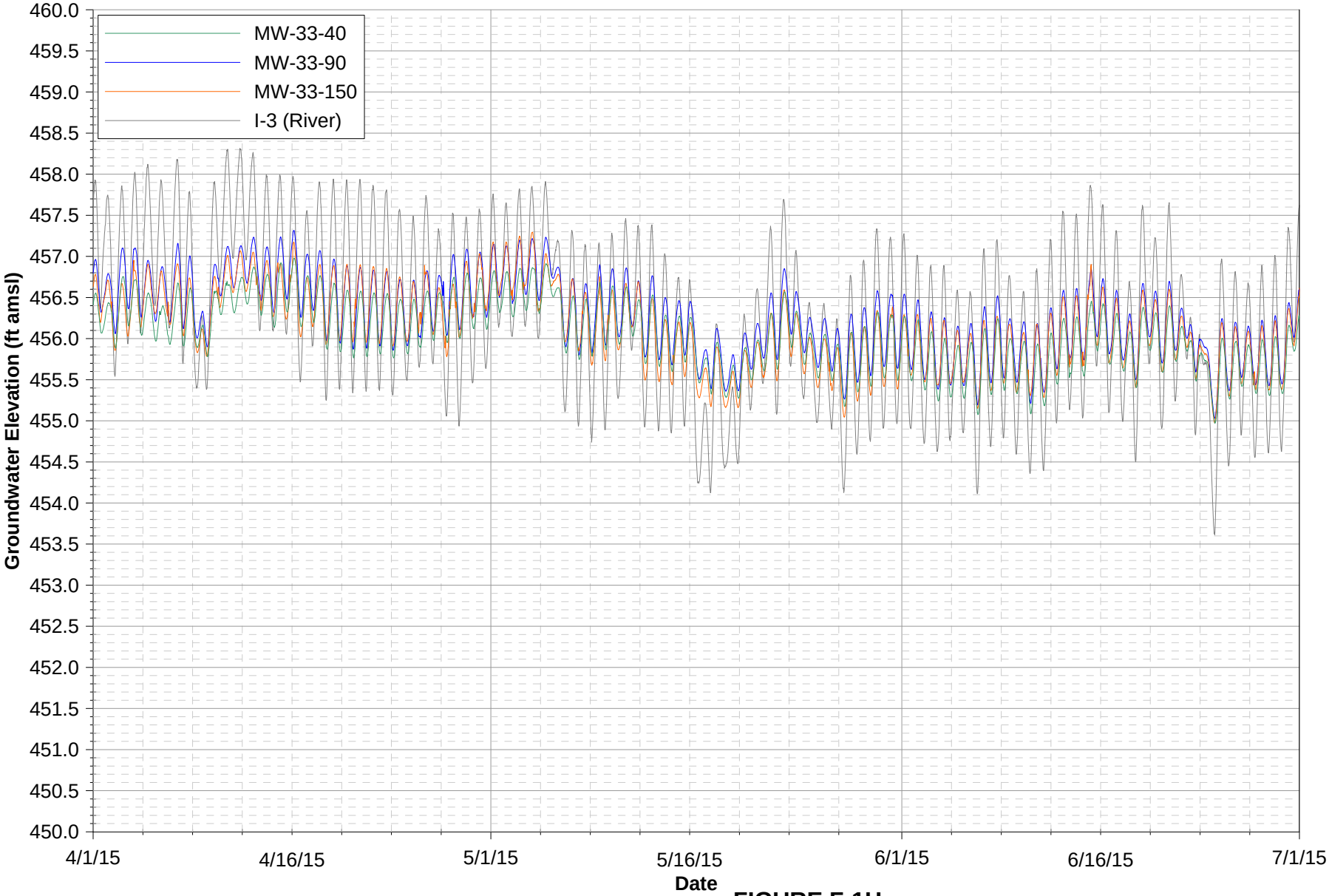
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1G
MW-32 HYDROGRAPH
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

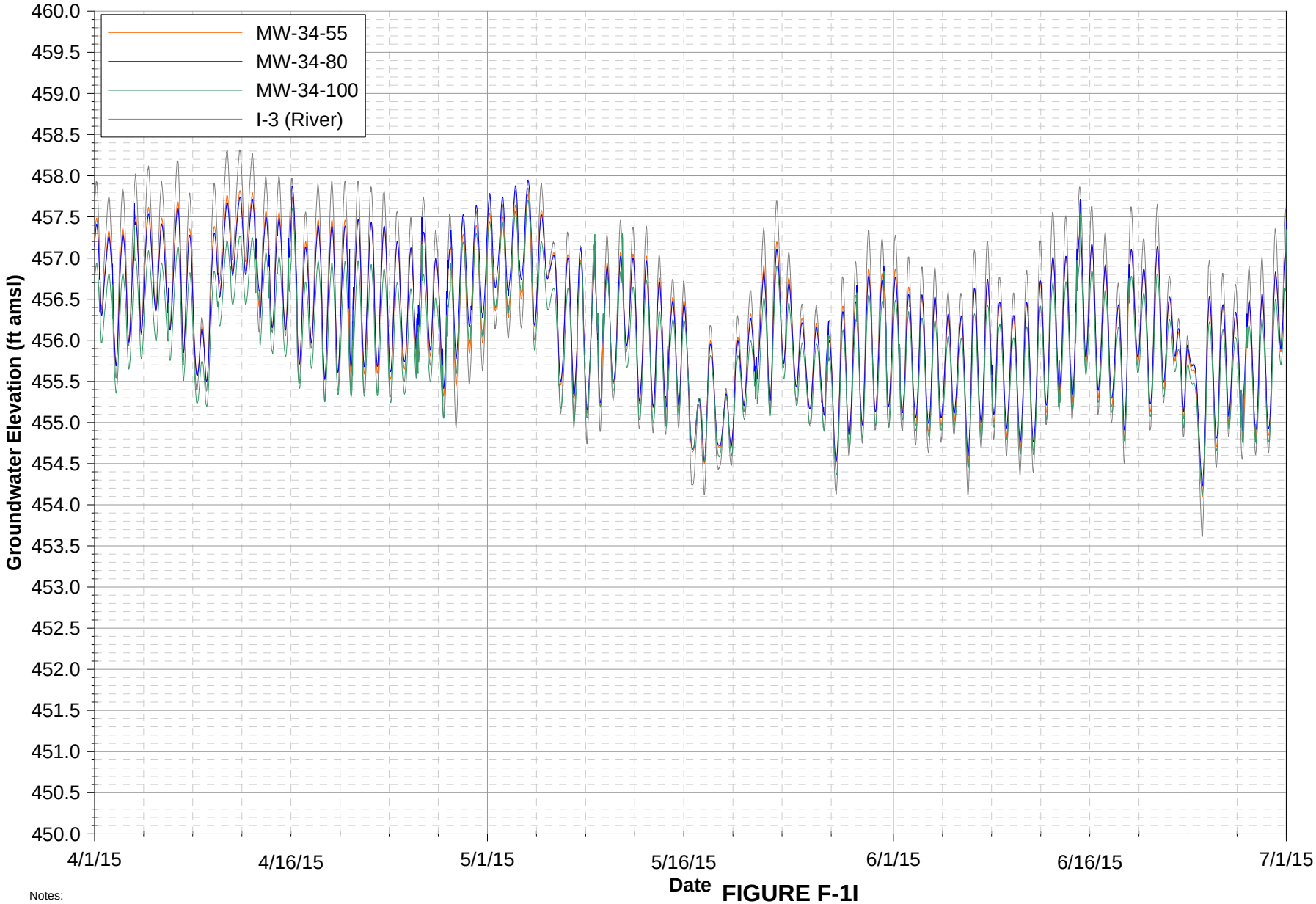
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1H
MW-33 CLUSTER HYDROGRAPHS
SEDOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

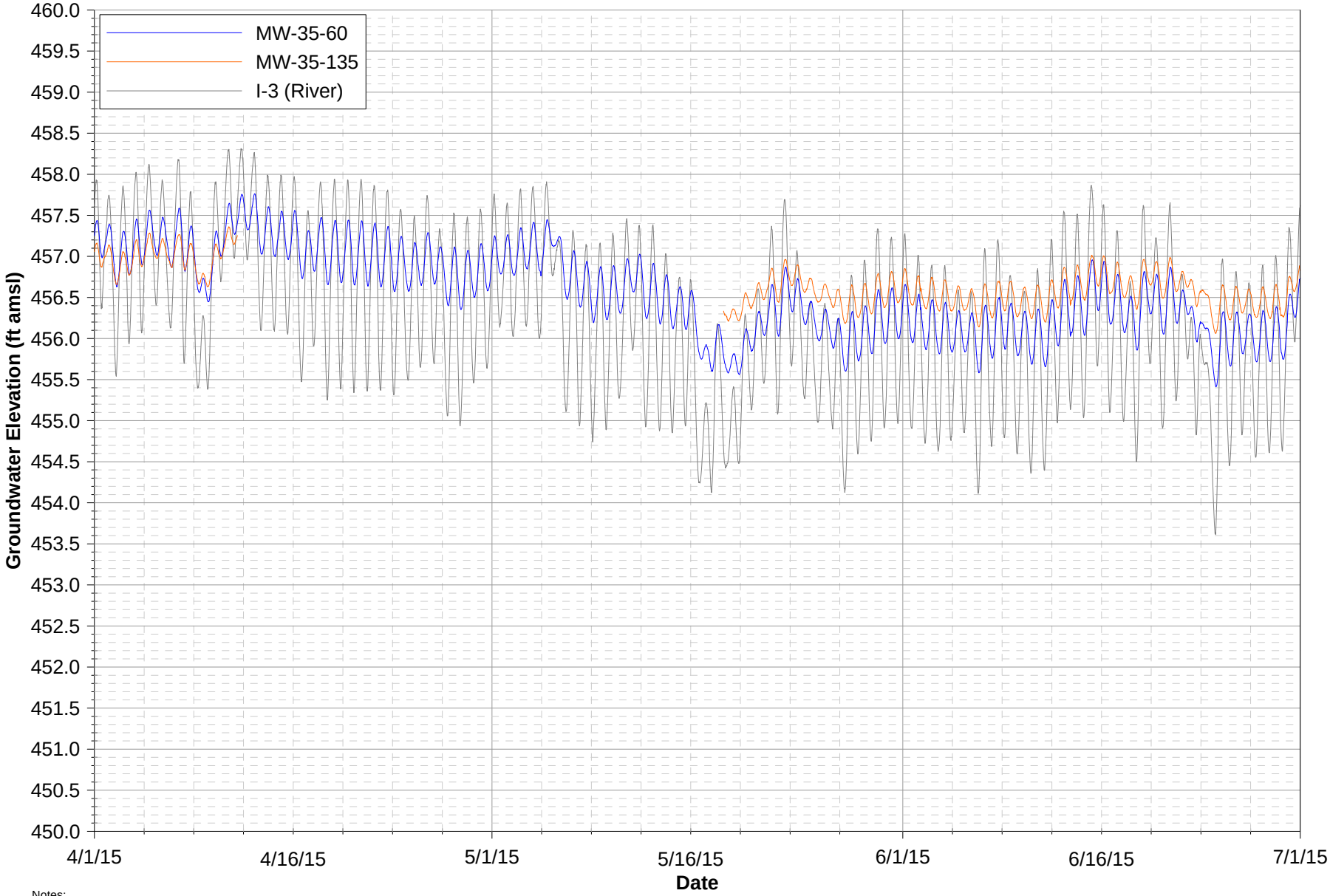
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1I
MW-34 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

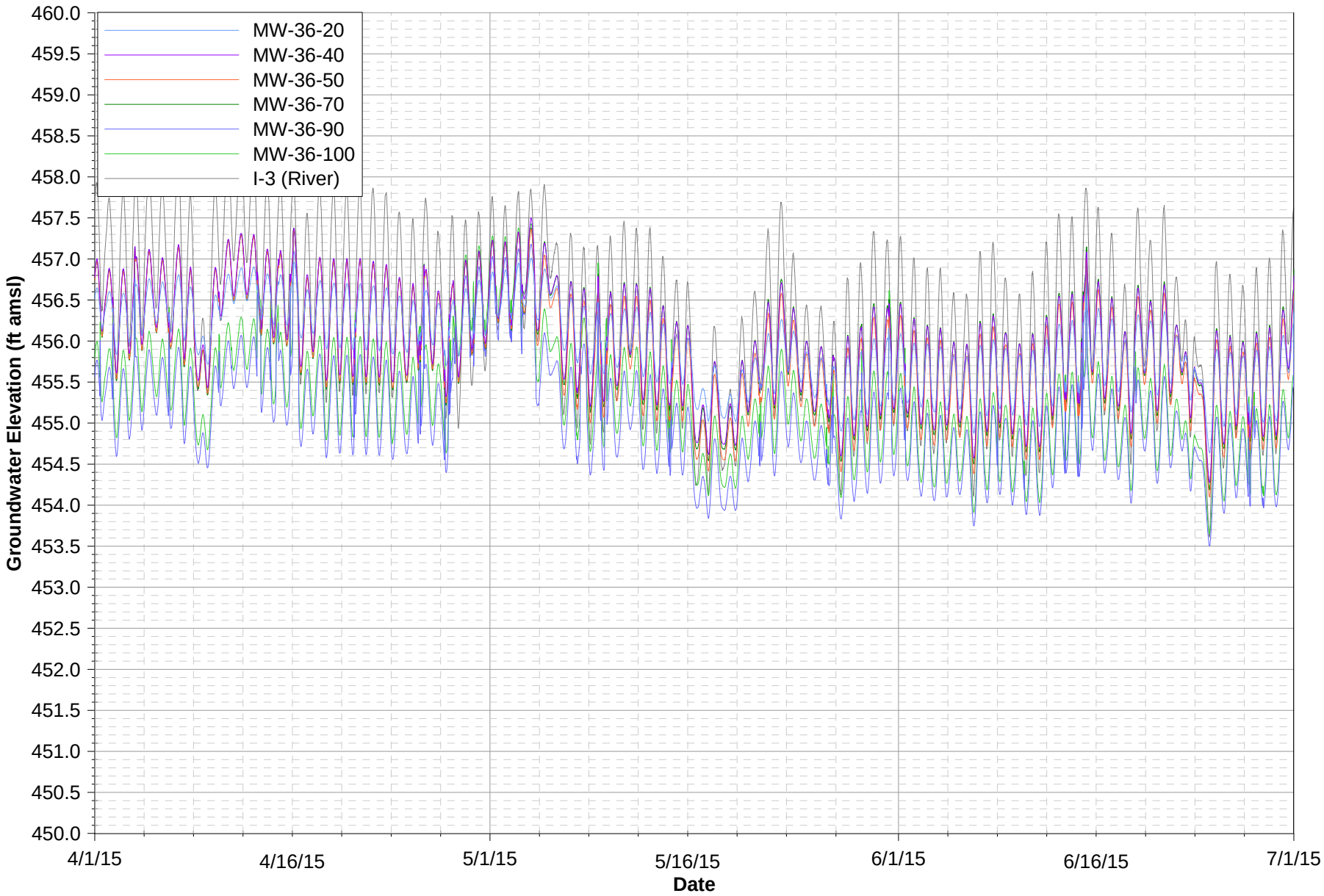
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-35-135 data unavailable from April 11, 2015 through May 18, 2015 due to transducer malfunction.

FIGURE F-1J
MW-35 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



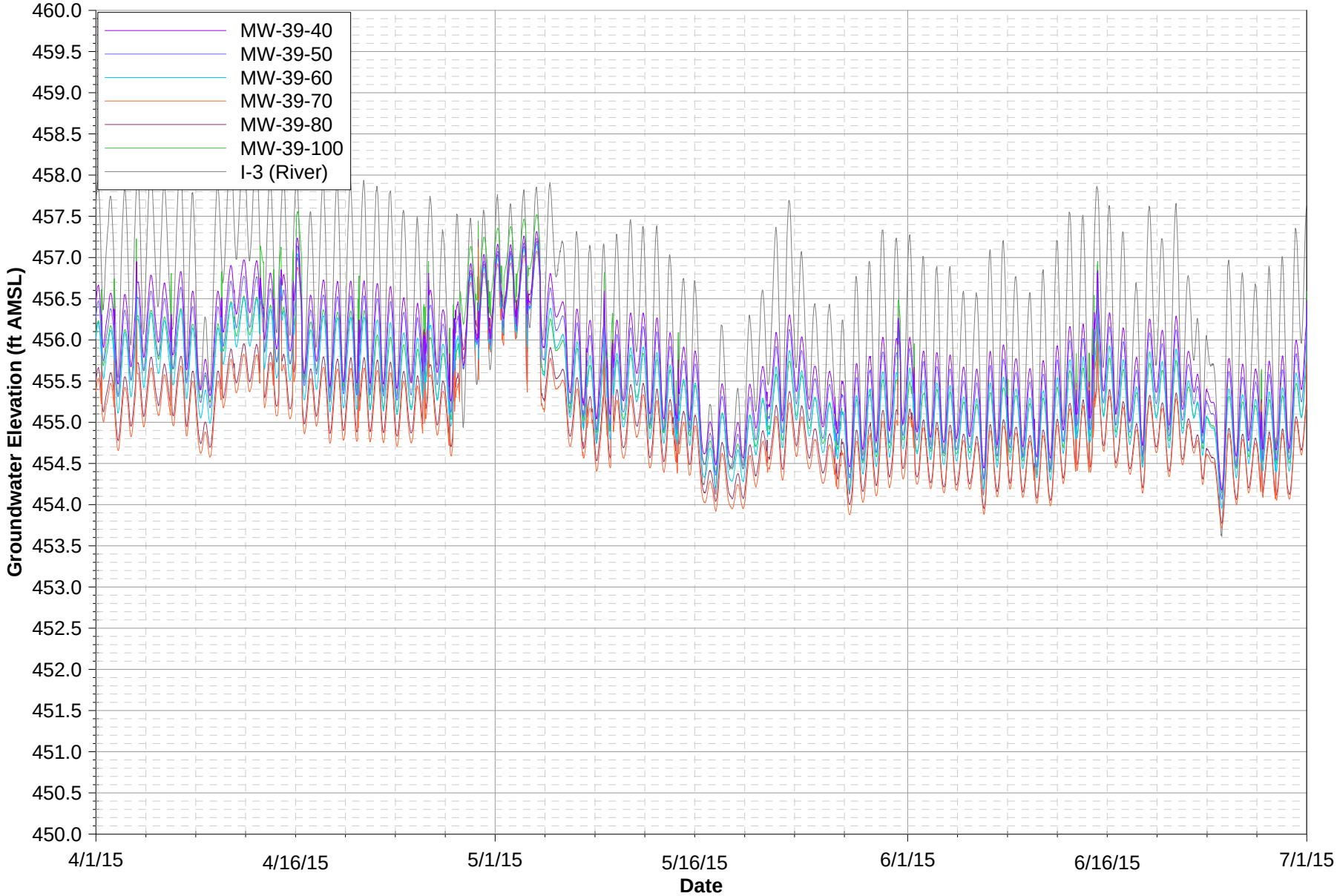
Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1K
MW-36 CLUSTER HYDROGRAPHS

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

CH2MHILL

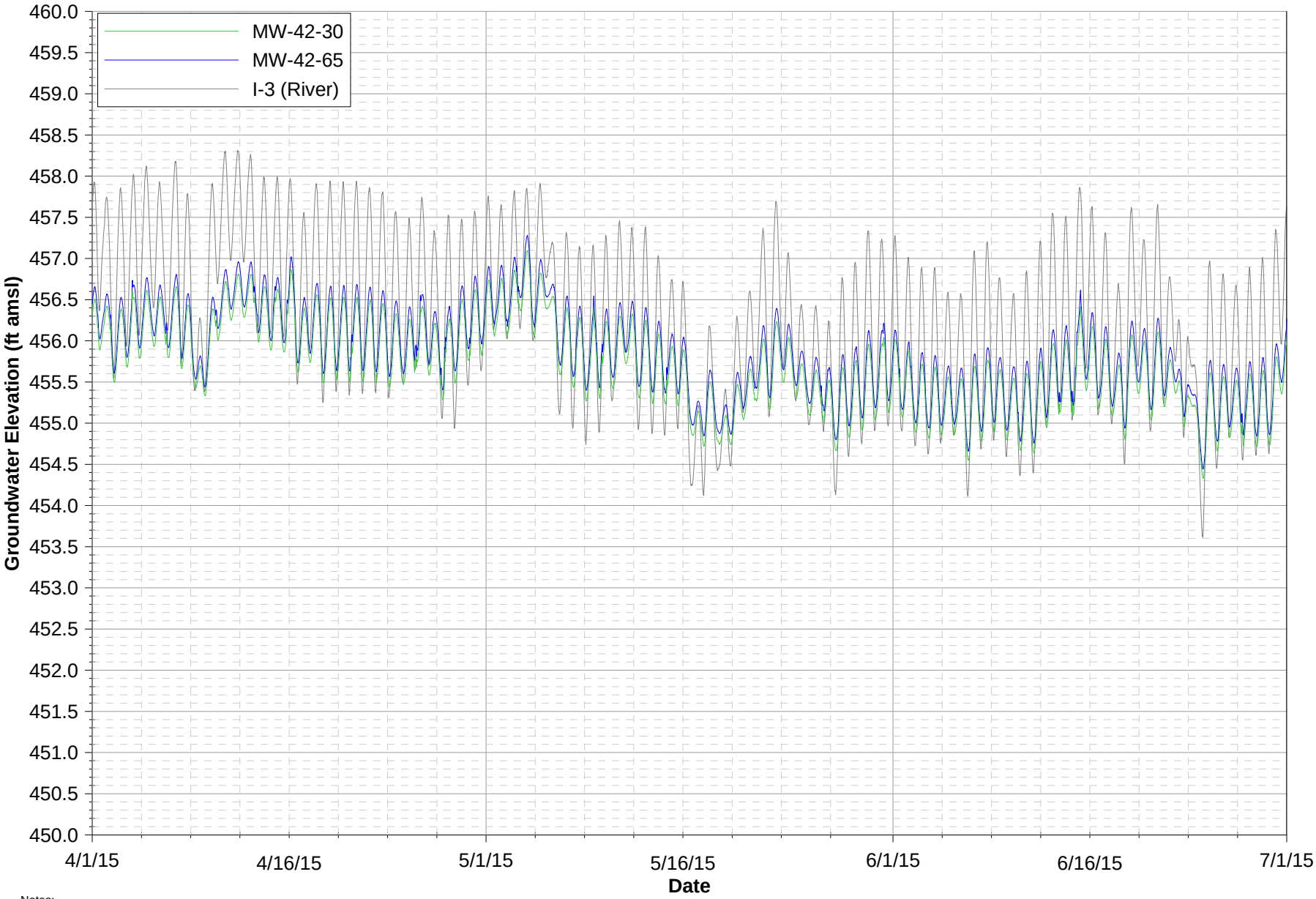
\\zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2011-2013_Combined_Monitoring\Reporting\GMP_PMP\2015_Q2\Draft_2015_Q2_GMP_PMP\Appendices\F_Hydrographs



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1L
MW-39 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

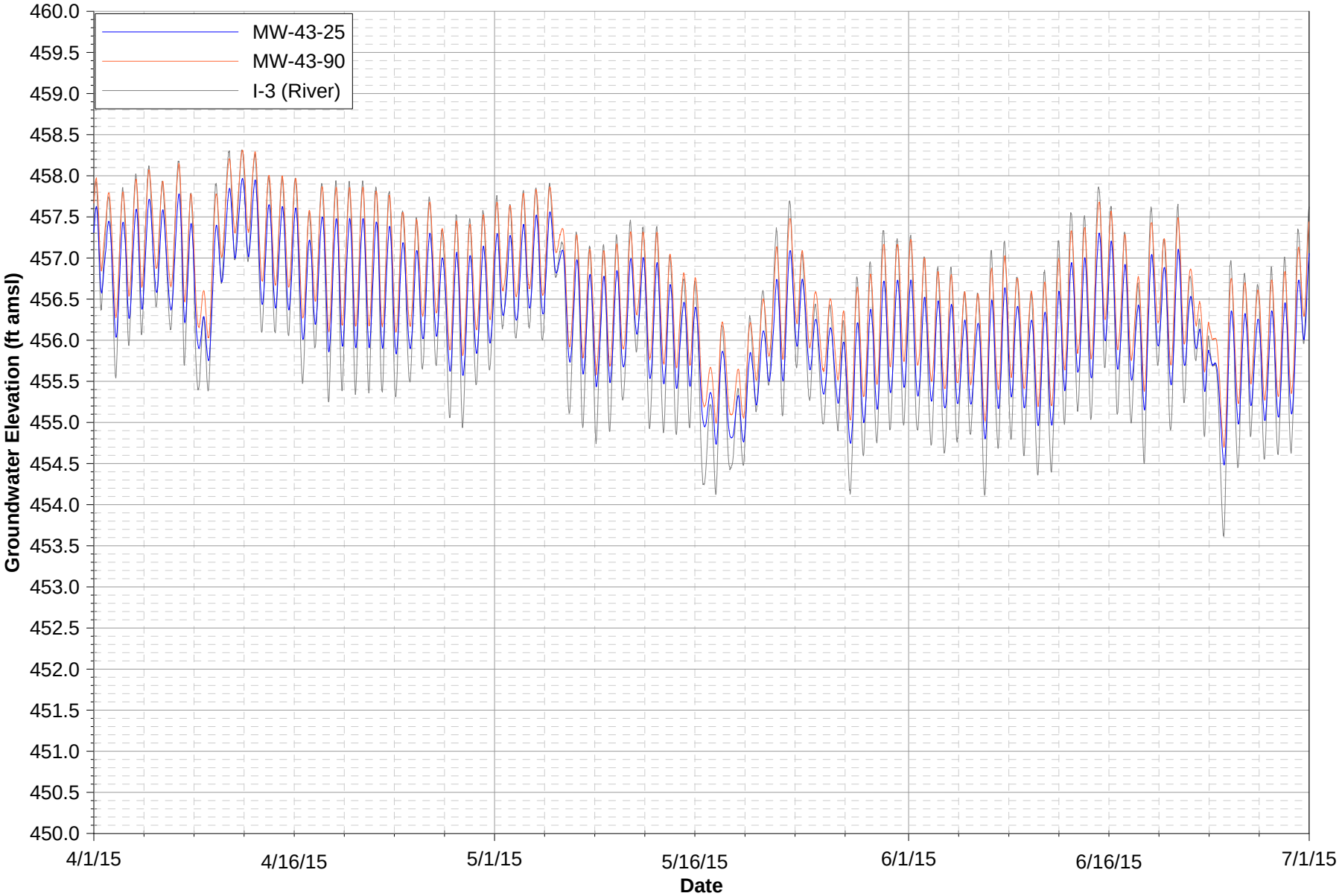
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1M
MW-42 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

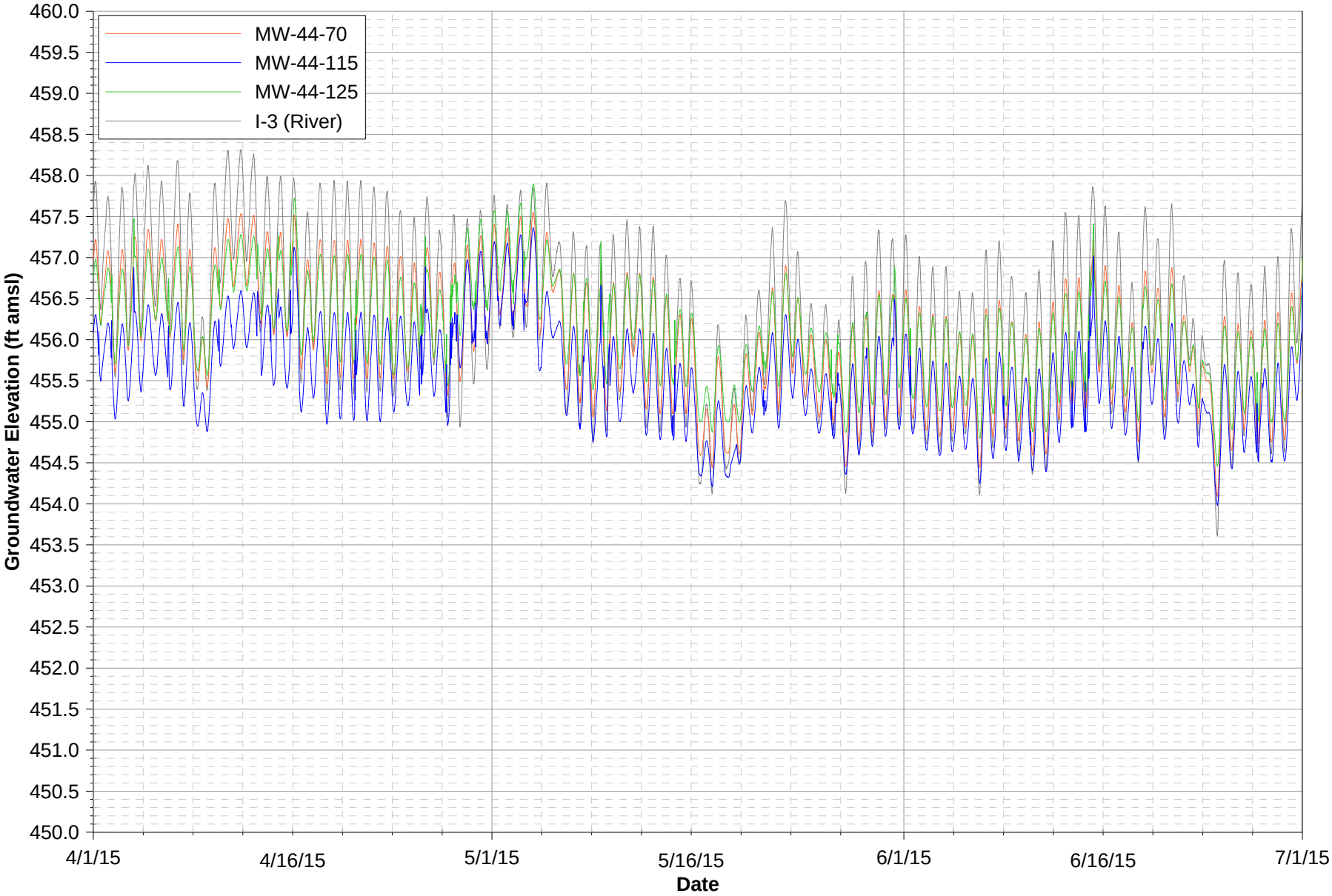
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1N
MW-43 CLUSTER HYDROGRAPHS
SECOND 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.

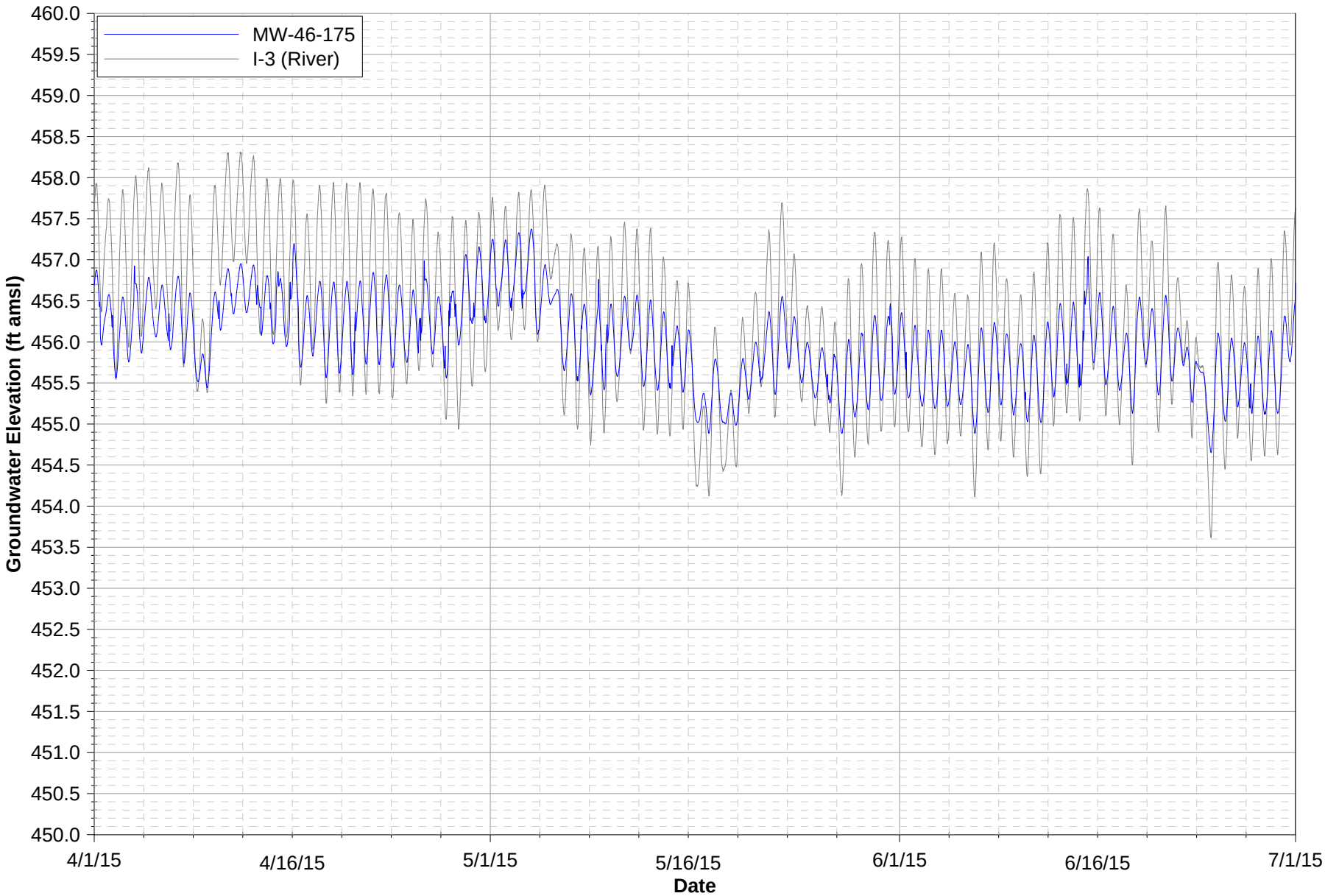
FIGURE F-1O
MW-44 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1P
MW-45-95a HYDROGRAPH
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

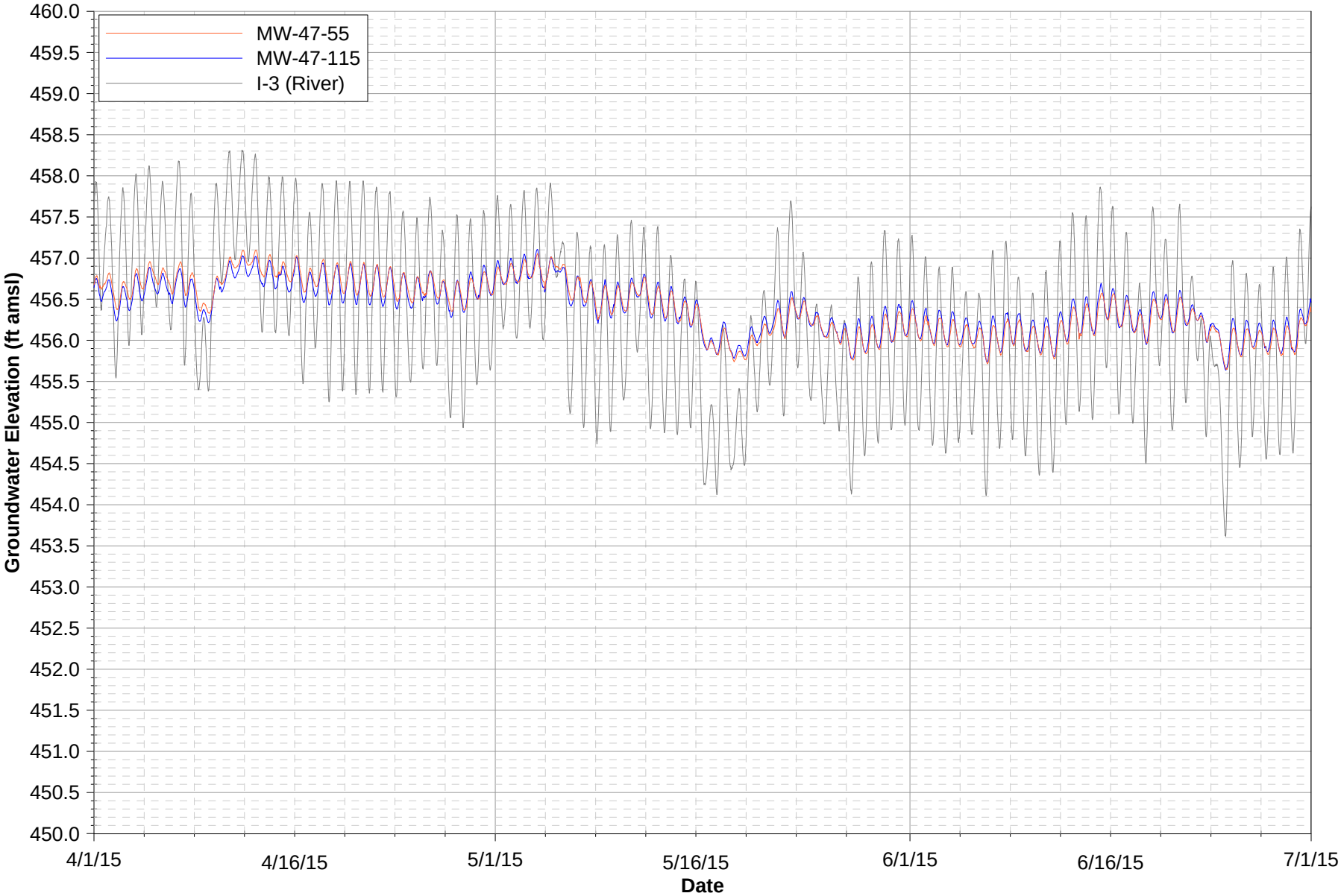
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1Q
MW-46 HYDROGRAPH
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

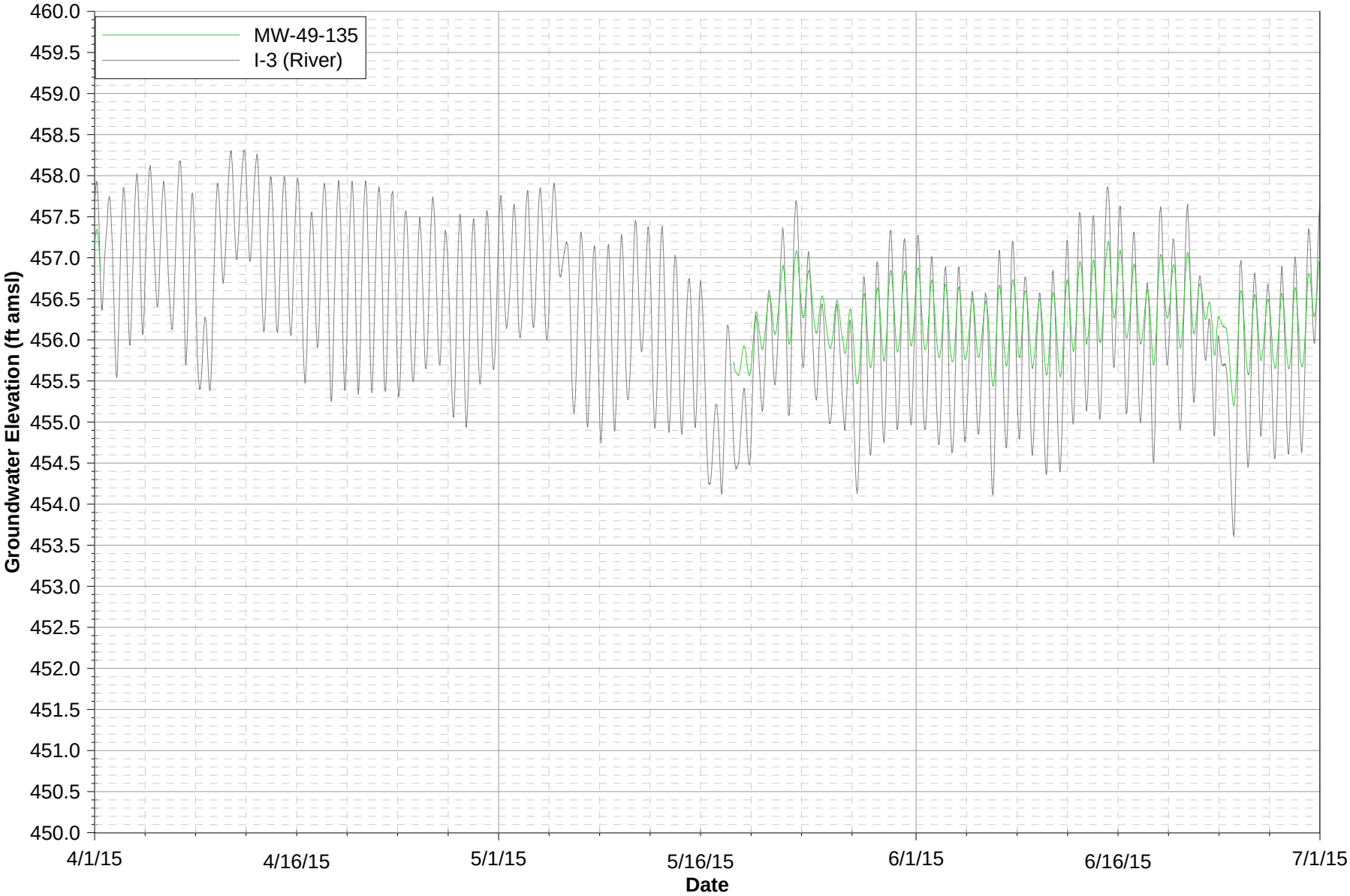
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1R
MW-47 CLUSTER HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

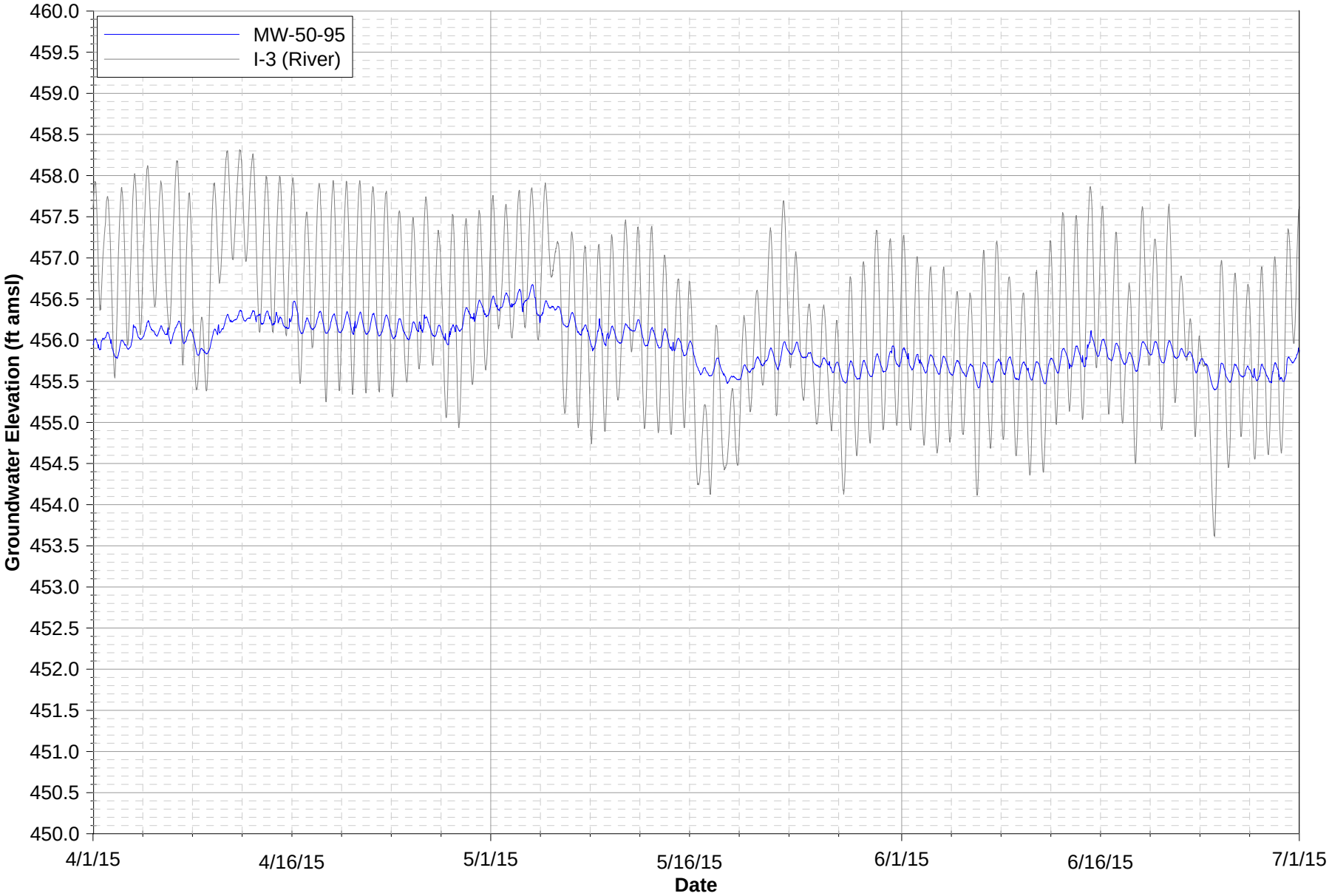
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-49-135 data unavailable from April 1, 2015 through May 18, 2015 due to transducer malfunction.

FIGURE F-1S
MW-49 HYDROGRAPH
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

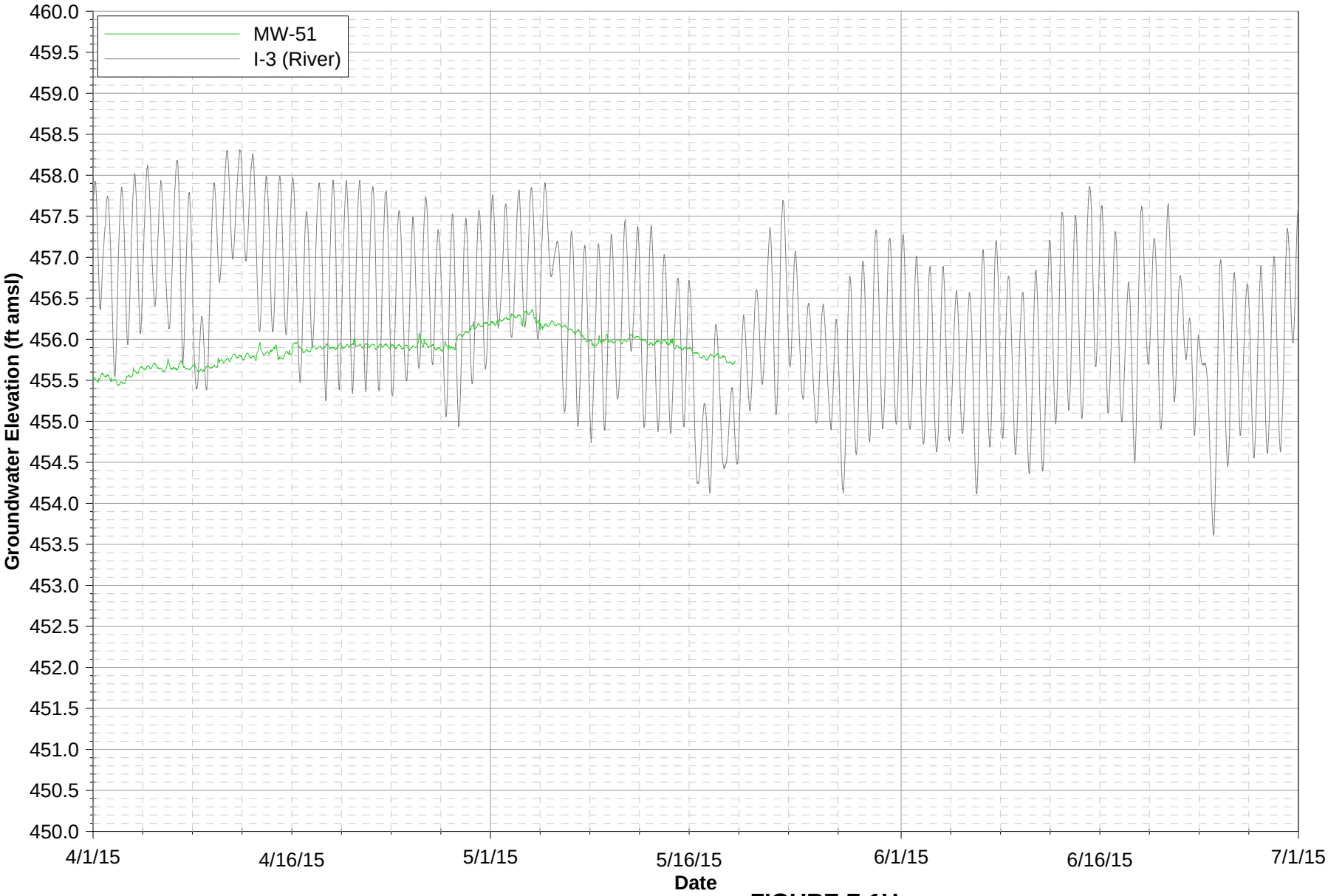
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.

FIGURE F-1T
MW-50 HYDROGRAPH
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

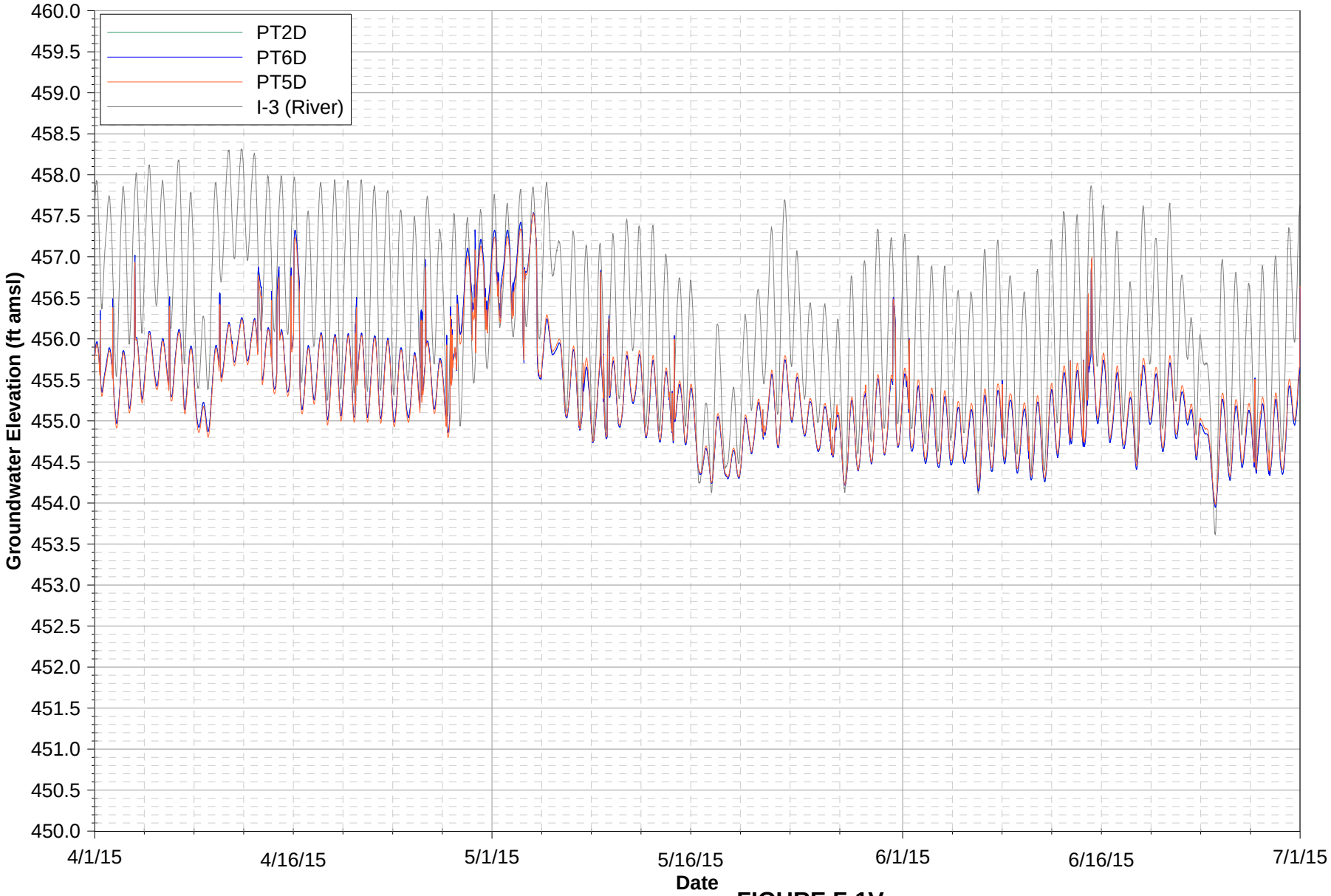
CH2MHILL



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-51 data unavailable from May 19, 2015 through June 30, 2015 due to transducer malfunction.

FIGURE F-1U
MW-26 AND MW-51 HYDROGRAPHS
SECOND 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.

FIGURE F-1V
IN SITU PILOT STUDY WELL HYDROGRAPHS
SECOND QUARTER 2015 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL