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LOCKHEED MARTIN

May 31, 2018

Mr. Fredrick Moore
Department of Environmental Quality
Eastern Region Bend Office
475 NE Bellevue Drive, Suite 110
Bend, OR 97701

Subject: Former Martin Marietta Company Reduction Facility
The Dalles, Wasco County, Oregon
Transmittal – Combined 2018 Semiannual RCRA and Annual CERCLA Report

Dear Mr. Moore:

Attached is the Combined 2018 Semiannual RCRA and Annual CERCLA Report for the former Martin Marietta Reduction Facility located in The Dalles, Oregon. A CD of the full report has been sent via FedEx to your office in Bend, and a printed copy has been sent to the DEQ office in The Dalles.

If you have any questions regarding this report or would like additional printed copies, please contact me at 303-335-5489 or liaht.rosenstein@lmco.com.

Sincerely,

Liaht Rosenstein
Environmental Remediation Project Lead
Lockheed Martin Corporation

Cc: Ms. Laura Buelow, U.S. Environmental Protection Agency
Mr. Bob Schwarz, Oregon Department of Environmental Quality

Certification

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



5/31/18

Liaht Rosenstein
Environmental Remediation Project Lead

Date

COMBINED 2018 SEMIANNUAL RCRA AND ANNUAL CERCLA REPORT

Former Martin Marietta Reduction Facility

Lockheed Martin Corporation

The Dalles, Oregon

ORD 052 221 025

Prepared for:

Lockheed Martin Corporation
2550 N. Hollywood Way, Suite 406
Burbank, CA 91505

Prepared by:

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May 31, 2018

Project No. 661M129556

Combined 2018 Semiannual RCRA and Annual CERCLA Report

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TABLE OF CONTENTS

Page

ACRONYMS vii

1.0 INTRODUCTION 1
- 1.1 PURPOSE 1
- 1.2 BACKGROUND 1

2.0 RCRA POST-CLOSURE CARE PROGRAM 3
- 2.1 RCRA LANDFILL AND LCS INSPECTIONS 4
- 2.2 LEACHATE TRANSFER SAMPLING AND ANALYSIS 6
  - 2.2.1 Background 6
  - 2.2.2 Leachate Transfer 6
  - 2.2.3 Leachate Sampling and Analysis 6
- 2.3 RCRA LANDFILL GROUNDWATER MONITORING 6
  - 2.3.1 Objective 6
  - 2.3.2 March 2018 Semiannual Monitoring Well Sampling 7
  - 2.3.3 Water Level Measurements 8
- 2.4 HYDROGEOLOGY 8
  - 2.4.1 Groundwater Flow 9
  - 2.4.2 Water Level Variations 10
- 2.5 DATA VALIDATION RESULTS 10
- 2.6 MARCH 2018 RCRA GROUNDWATER QUALITY SUMMARY 11

3.0 CERCLA POST-CLOSURE CARE PROGRAM 11
- 3.1 CERCLA LANDFILL AND LCS INSPECTIONS 12
- 3.2 SCRUBBER SLUDGE PONDS INSPECTION 13
- 3.3 CERCLA LANDFILL LEACHATE COLLECTION, TREATMENT, SAMPLING AND ANALYSIS, AND DISCHARGE 14
  - 3.3.1 Background 14
  - 3.3.2 CERCLA Landfill Leachate Collection 14
  - 3.3.3 Treatment 15
  - 3.3.4 Sampling and Analysis 16
  - 3.3.5 POTW Discharge and Sampling 17
- 3.4 CERCLA LANDFILL GROUNDWATER MONITORING 17
  - 3.4.1 Objective 17
  - 3.4.2 2018 Annual CERCLA Landfill Monitoring Well Sampling 18
  - 3.4.3 Water Level Measurements 19
- 3.5 HYDROGEOLOGY 19
  - 3.5.1 Groundwater Flow 20
  - 3.5.2 Water Level Variations 20
- 3.6 DATA VALIDATION RESULTS 20
- 3.7 MARCH 2018 GROUNDWATER QUALITY SUMMARY 21

4.0 COMPREHENSIVE GROUNDWATER INVESTIGATION PROGRAM 21
- 4.1 OBJECTIVE 21
- 4.2 CLEANUP LEVELS 22
- 4.3 GROUNDWATER MONITORING 23

TABLE OF CONTENTS (cont.)

Page

4.3.1 Monitoring Activities 23
4.3.2 Water Level Measurements 24
4.4 HYDROGEOLOGY 24
4.4.1 Groundwater Gradients and Flow Directions 24
4.5 DATA VALIDATION RESULTS 25
4.6 GROUNDWATER QUALITY SUMMARY 26
5.0 CONCLUSIONS 27
6.0 REFERENCES 29

TABLES

Table 1 Water Level Measurements

Table 2 RCRA Landfill Groundwater Analytical Results

Table 3 CERCLA Leachate Collection System Production, Treatment System Volumes, and Discharge Volumes

Table 4 CERCLA Leachate Collection System Analytical Results

Table 5 CERCLA Treatment System Analytical Results

Table 6 CERCLA Groundwater Analytical Results

Table 7 Groundwater Analytical Results for Non-PAHs

Table 8 Groundwater Analytical Results for PAHs

FIGURES

Figure 1	Site Location
Figure 2	Site Layout
Figure 3	Monitoring Well Locations
Figure 4	RCRA Landfill Monitoring Locations
Figure 5	Potentiometric Surface Map for S & S_L Zones, March 2018
Figure 6	RCRA Landfill Groundwater Quality, March 2018
Figure 7	CERCLA Landfill Monitoring Locations
Figure 8	CERCLA Landfill Groundwater Quality, March 2018
Figure 9	Potentiometric Surface Map for Perched Zone, March 2018
Figure 10	Potentiometric Surface Map for A Aquifer, March 2018
Figure 11	Cyanide Concentrations in Perched Zone (Four Most Recent Events)
Figure 12	Fluoride Concentrations in Perched Zone (Four Most Recent Events)
Figure 13	Sulfate Concentrations in Perched Zone (Four Most Recent Events)
Figure 14	PAH Concentrations in Perched Zone (Four Most Recent Events)
Figure 15	Cyanide Concentrations in S and S_L Zones (Four Most Recent Events)
Figure 16	Fluoride Concentrations in S and S_L Zones (Four Most Recent Events)
Figure 17	Sulfate Concentrations in S and S_L Zones (Four Most Recent Events)
Figure 18	PAH Concentrations in S and S_L Zones (Four Most Recent Events)
Figure 19	Cyanide Concentrations in A Aquifer (Four Most Recent Events)
Figure 20	Fluoride Concentrations in A Aquifer (Four Most Recent Events)
Figure 21	Sulfate Concentrations in A Aquifer (Four Most Recent Events)
Figure 22	WAD Cyanide Dot Map in Perched Zone, March 2018
Figure 23	Fluoride Dot Map in Perched Zone, March 2018

FIGURES (cont.)

Figure 24 Sulfate Dot Map in Perched Zone, March 2018

Figure 25 WAD Cyanide Dot Map in S and S_L Zones, March 2018

Figure 26 Fluoride Dot Map in S and S_L Zones, March 2018

Figure 27 Sulfate Dot Map in S and S_L Zones, March 2018

Figure 28 WAD Cyanide Dot Map in A Aquifer, March 2018

Figure 29 Fluoride Dot Map in A Aquifer, March 2018

Figure 30 Sulfate Dot Map in A Aquifer, March 2018

CHARTS

Chart 1 RCRA Leachate Collection System Production

Chart 2 RCRA Groundwater Hydrograph – S Zone

Chart 3 RCRA Groundwater Analytical Data – WAD Cyanide

Chart 4 RCRA Groundwater Analytical Data – Fluoride

Chart 5 RCRA Groundwater Analytical Data – Sulfate

Chart 6 CERCLA Leachate Collection System Production vs. Precipitation

Chart 7 CERCLA Groundwater Hydrograph – S Zone

Chart 8 CERCLA Groundwater Hydrograph – A and B Aquifers

Chart 9 CERCLA Groundwater Analytical Data – WAD Cyanide, S Zone

Chart 10 CERCLA Groundwater Analytical Data – Fluoride, S Zone

Chart 11 CERCLA Groundwater Analytical Data – Sulfate, S Zone

Chart 12 CERCLA Groundwater Analytical Data – WAD Cyanide, A Aquifer

Chart 13 CERCLA Groundwater Analytical Data – Fluoride, A Aquifer

Chart 14 CERCLA Groundwater Analytical Data – Sulfate, A Aquifer

APPENDICES

Appendix A RCRA Inspection Forms

Appendix B Precipitation Data

Appendix C Groundwater Sampling Field Forms

Appendix D Laboratory Reports

Appendix E Data Validation Reports

Appendix F CERCLA Inspection Forms

Appendix G Scrubber Sludge Pond Inspection Form

Appendix H Monthly POTW Reports

Appendix I Hydrographs

ACRONYMS

µg/L	micrograms per liter
ACL	Alternate Concentration Limit
AMEC	AMEC Environment & Infrastructure Inc.
Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
Apex	Apex Laboratories
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COCs	Constituents of Concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
DEQ	Oregon Department of Environmental Quality
DGWR	The Dalles Groundwater Reservoir
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Differences
J	Estimated value
LCS	leachate collection system
Lockheed Martin	Lockheed Martin Corporation
MCL	Maximum Contaminant Level
mg/L	milligrams per liter
MMRF	Martin Marietta Reduction Facility
MOA	Memorandum of Agreement
msl	mean sea level
NAC	Northwest Aluminum Company

ACRONYMS (CONT.)

NAVD88	North American Vertical Datum of 1988
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
ORELAP	State of Oregon Environmental Laboratory Accreditation Program
ORP	oxidation-reduction potential
PAHs	Polycyclic aromatic hydrocarbons
POTW	Publically Owned Treatment Works
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SIM	selective ion monitoring
SM	Standard Method
SMCL	Secondary Maximum Contaminant Level
SWMU	Solid Waste Management Units
TOC	Total Organic Carbon
WAD	weak acid-dissociable cyanide
Wood	Wood Environment & Infrastructure Solutions, Inc.

COMBINED
2018 SEMIANNUAL RCRA AND ANNUAL CERCLA REPORT
Former Martin Marietta Reduction Facility
The Dalles, Oregon

1.0 INTRODUCTION

1.1 PURPOSE

Lockheed Martin Corporation (Lockheed Martin) contracted Wood Environment & Infrastructure Solutions, Inc. (Wood, formerly Amec Foster Wheeler Environment & Infrastructure, Inc. [Amec Foster Wheeler]), to conduct post-closure monitoring for the closed Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) landfills and to implement the Final Work Plan (Tetra Tech, Inc. 2014) for the Comprehensive Groundwater Investigation at the former Martin Marietta Reduction Facility (MMRF) in The Dalles, Oregon (Site).

This report presents the results of groundwater and Site monitoring activities as summarized below:

- RCRA Landfill monitoring (October 2017 through March 2018) and groundwater monitoring (March 2018); and
- CERCLA Landfill monitoring (October 2017 through March 2018) and groundwater monitoring (March 2018); and
- Site-wide Comprehensive Groundwater Monitoring Program (March 2018).

1.2 BACKGROUND

The former MMRF Site is located on the west bank of the Columbia River. The former facility was a primary aluminum smelter that operated from 1958 through 2001. During production operations, the former MMRF occupied approximately 350 acres within an 800-acre area zoned for heavy industry and manufacturing (Figure 1).

Wastes, including cathode waste (to include spent potliner, currently classified as a RCRA listed waste [K088]), were generated during aluminum production and accumulated on Site. After Oregon listed spent potliner as a hazardous waste, a lined storage pad was constructed and permitted under RCRA as a waste pile. Cathode waste and some underlying soil from an area historically used for storing of spent potliner were consolidated into this permitted waste pile. The waste pile was subsequently closed in place as the RCRA Landfill in 1984, in accordance with a closure plan approved by the Oregon Department of Environmental Quality (DEQ). Post-closure care has been performed in accordance with RCRA Post-Closure Care Permit ORD 052 221 025 (State of Oregon/DEQ, 2017).

In 1987, the U.S. Environmental Protection Agency (EPA) listed the MMRF property as the "Martin Marietta Aluminum Company" on the CERCLA National Priorities List (NPL). The RCRA Landfill portion of the Site was excluded from the NPL. Martin Marietta remediated the CERCLA site under a 1988 Record of Decision (ROD), a 1989 Consent Decree, and a 1994 Explanation of Significant Differences (ESD). In 1996, the EPA delisted the Site from the NPL.

In 2004, a Memorandum of Agreement (MOA) between the DEQ and EPA integrated management of the CERCLA Landfill, Scrubber Sludge Ponds, and the Cyanide Destruction System (now known as the CERCLA Treatment System or Permanent Treatment System) into the RCRA Post-Closure Care Permit. In 2006, the RCRA Post-Closure Care Permit was modified to integrate CERCLA and RCRA groundwater monitoring and reporting requirements, including preparing a combined RCRA and CERCLA report. The RCRA Post-Closure Care Permit specifies semiannual groundwater monitoring at the RCRA Landfill and annual groundwater monitoring at the CERCLA Landfill. EPA terminated the MOA on October 4, 2012; however, the 2006 RCRA Post-Closure Care Permit, with approved modifications through the present, remains the governing document. The specific components of the Site owned by Lockheed Martin and covered under the Post-Closure Care Permit are listed below and shown on Figure 2:

- RCRA Landfill,
- RCRA Leachate Collection System (LCS),
- CERCLA Landfill,

- CERCLA LCS,
- CERCLA Treatment System or Permanent Treatment System, and
- Scrubber Sludge Ponds.

As of October 27, 2017, Lockheed Martin executed a property deed with Design, LLC that modified Lockheed Martin's property near the Scrubber Sludge Ponds and the CERCLA Landfill. The property connecting the RCRA and CERCLA Landfills was also transferred to Design, LLC. An easement was established with Northwest Aluminum Company (NAC) to maintain access between the RCRA Landfill and River Road. Figure 2 reflects the new boundaries of the Lockheed Martin-owned property.

2.0 RCRA POST-CLOSURE CARE PROGRAM

The RCRA Post-Closure Care Permit specifies post-closure requirements for the RCRA Landfill:

- Maintain the integrity and effectiveness of the final RCRA Landfill cover, including preventing stormwater run-on and run-off from eroding or otherwise damaging the final cover, and repairing the cover as necessary to correct the effects of settling, subsidence, erosion, or other events.
- Operate and monitor the leachate collection and removal system.
- Maintain and monitor the groundwater monitoring system and comply with other applicable requirements of Title 40 Code of Federal Regulations (CFR) Part 264.
- Protect and maintain surveyed benchmarks used in complying with surveying and recordkeeping requirements of Title 40 CFR 264.309.

To support these requirements, the following activities are performed:

- Inspections of the RCRA Landfill final cover,
- Inspections of the LCS, and

- Semiannual groundwater monitoring in accordance with the Sampling and Analysis Plan (SAP) (Amec Foster Wheeler, 2017a).

The layout of the former MMRF Site, including the RCRA Landfill is shown on Figure 2. Figure 3 shows the locations of all Site monitoring wells. Figure 4 shows a close-up view of the locations of the RCRA monitoring wells. Figures 5 and 6 provide details on groundwater elevations and groundwater quality near the RCRA Landfill, respectively. Water level data for March 2018 is provided on Table 1. Groundwater quality data for the RCRA Landfill is provided in Table 2. Chart 1 presents the RCRA LCS production rate through January 2018, which was the last time leachate was removed for offsite disposal. RCRA Groundwater Hydrograph for the S Zone is presented graphically on Chart 2. Groundwater quality data for weak acid dissociable (WAD) cyanide, fluoride, and sulfate are presented graphically on Charts 3 through 5, respectively.

2.1 RCRA LANDFILL AND LCS INSPECTIONS

The RCRA Landfill cover and RCRA LCS are inspected annually and quarterly, respectively. Inspections are also performed after severe weather events. The inspections monitor for deterioration, malfunction, or improper operation of the run-on and run-off systems, and to verify proper functioning of the leachate collection and removal system.

The annual inspection of the RCRA Landfill consists of:

- Cover inspection (checking for erosion, animal burrows, and woody vegetation),
- Fence and gate inspection (checking fence and gate integrity to ensure that warning signs are in place),
- Drainage system inspection (checking for ponded water or blockages in the channels or culverts and checking cap drain discharge pipes), and
- Inspection of the area adjacent to the landfill (checking for riprap erosion, ponded water, silt deposits, and damaged well heads).

The quarterly RCRA LCS inspection consists of:

- Inspecting the sump leak detection system, fluid high-level warning lights, and testing of the system alarm autodialer,
- Inspecting the temporary storage drums, and
- Inspecting the building and building slab.

The following quarterly RCRA inspections were performed during the reporting period:

Inspection	4th Quarter 2017	1st Quarter 2018
RCRA Landfill	December 11, 2017	March 22, 2018*
RCRA LCS	December 11, 2017	March 22, 2018

*Note: In addition to the semiannual RCRA Landfill inspection, the RCRA Landfill was also voluntarily inspected during the first quarter (March 2018) inspection period (Section 2.0 of Amec Foster Wheeler, 2016b). Next required inspection due June 2018.

During the RCRA LCS inspections, all items were found to be in good condition. The depth of leachate measured in the bottom of the sump during December 2017 was approximately 1.40 feet (168 gallons). In March 2018, the depth of leachate measured in the bottom of the sump was approximately 0.85 feet (84 gallons) following the transfer of approximately 255 gallons on January 11, 2018. Quarterly inspection forms for this reporting period are provided in Appendix A.

Visual comparison of precipitation data provided by the National Oceanic and Atmospheric Administration (NOAA) for the Columbia Gorge Regional Airport located in Dallesport, WA (approximately one mile southeast of the Site) with leachate production records indicates that precipitation had little effect, if any, on the quantity of leachate from the RCRA Landfill. As reported in Appendix B, the maximum daily precipitation during the reporting period was 0.63 inches on October 21, 2017 (NOAA, 2018; Appendix B).

2.2 LEACHATE TRANSFER SAMPLING AND ANALYSIS

2.2.1 Background

In accordance with RCRA Post-Closure Care Permit Condition V.C.1.b. (modified in February 2015), leachate collected from the RCRA sump is transported to an offsite disposal facility as necessary.

2.2.2 Leachate Transfer

Leachate was transferred once during this reporting period, on January 11, 2018, and it consisted of 255 gallons. Leachate was managed as K088 listed waste and was transported by Chemical Waste Management for disposal at their Arlington, Oregon, Subtitle C facility.

2.2.3 Leachate Sampling and Analysis

No sampling and laboratory analyses of leachate was conducted during the reporting period. The single transfer was disposed of under existing Chemical Waste Management profile OR333176 (profile approval expires January 31, 2019).

2.3 RCRA LANDFILL GROUNDWATER MONITORING

2.3.1 Objective

The groundwater monitoring points of compliance consist of one upgradient monitoring well (MW-5S) and eight downgradient or cross-gradient wells (MW-3S, MWR-4S, MW-17S, MW-22S, MW-23S, MW-35S, MW-36S, and MW-37S). The monitoring well locations are shown on Figure 4.

The primary objective of the RCRA Landfill groundwater monitoring program is to document constituent concentrations in groundwater and determine if the following groundwater protection standards are met, which were developed as part of the Consent Decree (EPA and DEQ, 1989) and are the approved groundwater protection standard in the Post-Closure Care Permit:

- Free cyanide (represented by WAD cyanide): 0.77 milligrams per liter (mg/L);
- Fluoride: 9.7 mg/L; and
- Sulfate: 3,020 mg/L.

Groundwater monitoring for the RCRA Post-Closure Care Permit program was conducted in accordance with the SAP (Amec Foster Wheeler, 2017a), which was revised under a II.S permit modification.

2.3.2 March 2018 Semiannual Monitoring Well Sampling

Groundwater was sampled for RCRA Landfill Post-Closure Care Permit compliance on March 14 and 15, 2018. The samples were collected with a peristaltic pump using pre-installed, dedicated tubing using EPA low-flow sampling techniques. At each well, field groundwater quality parameters (turbidity, dissolved oxygen, pH, specific conductivity, oxidation reduction potential [ORP], and temperature) were measured and recorded. Groundwater sampling field forms are presented in Appendix C.

The groundwater samples were collected using laboratory-supplied bottles, placed on ice, and transported under Chain of Custody to the contract laboratory, Apex Laboratories (Apex) in Tigard, Oregon, for analysis. Apex is accredited by the State of Oregon Environmental Laboratory Accreditation Program (ORELAP OR100062) and is an approved laboratory for analysis of the RCRA Post-Closure Care Permit groundwater samples. The groundwater samples were analyzed for:

- WAD cyanide by SM 4500-CN-I/E;
- Total cyanide by EPA Method 335.4;
- Fluoride by EPA SW-846-9056; and
- Sulfate by EPA Method 300.0-LL.

The analytical reports are provided in Appendix D. Validation of the data was completed on April 3, 2018 (see Appendix E). Data collected between September 2016 and March 2018 are presented in Table 2. Groundwater quality data for WAD cyanide, fluoride, and sulfate are presented graphically in Charts 3 through 5. The RCRA groundwater quality analytical results from March 2018 for WAD cyanide, total cyanide, fluoride, and sulfate are shown on Figure 6. There were no exceedances of free cyanide, fluoride, and sulfate groundwater protection standards at any of the RCRA wells sampled in March 2018.

2.3.3 Water Level Measurements

The RCRA Landfill groundwater monitoring program includes measuring water levels in the monitoring wells. The reference points for determining water level elevations are the tops of the polyvinyl chloride (PVC) well casings, which have been surveyed relative to mean sea level (msl); (North American Vertical Datum of 1988 [NAVD88]). To reduce variation in groundwater level measurements, static water levels for all wells are measured on the same day and before the wells are purged and sampled. Groundwater levels were measured to the nearest 0.01 foot using an electronic water level meter. Groundwater measurements from March 14, 2018, are included in Table 1. Groundwater elevation data are presented graphically in Chart 2 and on Figure 5.

2.4 HYDROGEOLOGY

Water levels are measured semiannually as part of the ongoing RCRA monitoring program. The stratigraphy and hydrogeology of the Site were characterized during the Remedial Investigation/Feasibility Study (RI/FS) (Geraghty & Miller, 1988) and recently updated as part of the Comprehensive Groundwater Monitoring Program (Tetra Tech, Inc. 2014; AMEC Environment & Infrastructure Inc. [AMEC] 2014d, Amec Foster Wheeler, 2015a). The Site is underlain by the Columbia River Basalt Group, which includes the following stratigraphic units (listed in order of descending depth):

- The Lolo Flow of the Priest Rapids Member,
- The Byron Interbed,
- The Rosalia Flow of the Priest Rapids Member,
- The Quincy/Squaw Creek Interbed, and
- The Sentinel Gap Flow of the Frenchman Springs Member.

Four hydrostratigraphic units were identified in the RI/FS: The S Zone (unconfined), the A aquifer (semi-confined), the B aquifer (confined), and The Dalles Groundwater Reservoir (DGWR). The S Zone is the interflow zone between the Lolo and Rosalia flows, including the Byron Member. The A

and B aquifers are the upper and lower pillow complexes, respectively, in the Rosalia flow. The DGWR is a permeable groundwater system within the Sentinel Gap Flow.

This system was refined in the Comprehensive Groundwater Investigation Work Plan (Tetra Tech, Inc. 2014) to include two additional zones: the Perched Zone and the S_L Zone. The Perched Zone consists of shallow groundwater found in fractures within the Lolo flow within about 25 feet of ground surface and higher than the Byron Interbed zone and, where present, in saturated soil (fill or natural) present in depressions on top of the flow. The S_L aquifer is the S Zone where the overlying Lolo flow and Byron Member components are missing because of erosion. The S_L aquifer is relevant in the area of the Scrubber Sludge Ponds.

RCRA monitoring wells are completed in the S Zone with the exception of monitoring well MW-5S which is completed in the Perched Zone. Lockheed Martin is evaluating if MW-37S should be classified as a Perched Zone monitoring well because its screen depth of 22 feet is above the Byron Interbed which is interpreted to be a depth of 25 feet. Assignment of these wells to the Perched Zone is based on additional characterization data developed in the First and Second Comprehensive Groundwater Investigation Technical Memorandums (AMEC 2014d; Amec Foster Wheeler 2015d).

2.4.1 Groundwater Flow

Water level measurements were evaluated to assess the magnitude and direction of the hydraulic gradient. Water levels in all nine RCRA groundwater monitoring wells were measured and recorded on March 14, 2018. These water levels, along with water levels collected for the Comprehensive Groundwater Investigation program, were used to prepare a potentiometric surface map for the S and S_L Zones (See Figure 5).

Groundwater flow velocities within the S and S_L Zone were estimated on the basis of the measured groundwater gradient and hydraulic conductivity estimates from aquifer tests (ARCADIS G&M, 2001). The estimated average hydraulic conductivity value for the S Zone at intervals intercepting the Byron Interbed is approximately 6×10^{-3} centimeters per second (the measured range is 3.2×10^{-4} to 1.2×10^{-2} centimeters per second; ARCADIS G&M, 2001).

Because groundwater moves only through pores (a combination of fractures within basalt and the interstitial spaces between sediments within the Byron Interbed of the S Zone), a term for effective porosity (Ne) is included in the expression for seepage velocity (V_s) or average linear velocity, where (*i*) is the hydraulic gradient:

$$V_s = \frac{Ki}{Ne}$$

A reasonable estimate of effective porosity of the S Zone at intervals intercepting the Byron Interbed is 10 percent (Divine, C. E. and Rask, B, 2002). A hydraulic gradient of 0.03 foot/foot east-northeast was calculated near S Zone monitoring wells MW-17S and MW-3S in the area of the RCRA Landfill on March 14, 2018. Using the equation above, the average linear velocity of groundwater in the S Zone in the area of the RCRA Landfill is estimated at approximately 1.8×10^{-5} centimeters per second (1863 feet per year).

2.4.2 Water Level Variations

Groundwater elevations for the RCRA monitoring wells for March 2018 ranged from 129.85 feet above msl in MW-36S to 137.02 feet above msl in MW-35S (Table 1). Water level data collected between March 1994 and March 2018 were used to construct hydrographs comparing all RCRA monitoring wells (Chart 2). Seasonal fluctuations are evident, and the water level elevations observed in the area of the RCRA Landfill in March 2018 were within the historical range.

2.5 DATA VALIDATION RESULTS

The RCRA groundwater monitoring results were reviewed in accordance with the Data Validation Checklist (Appendix E).

Documentation provided in the analytical data package was acceptable. Data quality was acceptable and results from these samples may be considered usable with the limitations described in the data validation checklist. Data qualifiers added during validation are summarized below:

- Amec Foster Wheeler J-qualified (estimated) two primary (MW-5S) and two duplicate (DUP01) results for fluoride and sulfate because of high field duplicate relative percent difference and low matrix spike and/or matrix spike duplicate recovery. A list of qualified data is presented in the data validation checklist (Appendix E).

Based on the data validation, 100 percent of the data are useable, meeting the SAP-specified minimum completeness goal of 90 percent (Amec Foster Wheeler, 2017a).

2.6 MARCH 2018 RCRA GROUNDWATER QUALITY SUMMARY

Table 2 summarizes groundwater quality data from September 2016 through March 2018 for the RCRA monitoring wells.

All concentrations of detected constituents are below their applicable groundwater protection standard from the Post-Closure Care Permit (Table 2). Samples analyzed for WAD cyanide were compared to the free cyanide groundwater protection standards. WAD cyanide concentrations ranged from non-detect (monitoring wells MW-3S, MWR-4S, MW-17S, MW-23S, MW-35S, MW-36S, and MW-37S) to 0.0126 mg/L in the primary sample collected at monitoring well MW-5S. Total cyanide concentrations ranged from non-detect (monitoring wells MW-3S, MWR-4S, and MW-36S) to 0.224 mg/L (MW-5S, primary sample). Fluoride concentrations ranged from 0.158 mg/L (MWR-4S) to 7.55 J mg/L (estimated; MW-5S, primary sample). Sulfate concentrations ranged from 14.7 mg/L (MW-37S) to 91.4 mg/L (MW-35S).

3.0 CERCLA POST-CLOSURE CARE PROGRAM

The CERCLA Landfill and LCS and Scrubber Sludge Ponds Post-Closure Care requirements consist of the following:

- Maintain the integrity and effectiveness of the final cover, including prevention of run-on and run-off from eroding or otherwise damaging the final cover and repairing the cap as necessary to correct the effects of settling, subsidence, erosion, or other events.

- Continue to operate and monitor the leachate collection and treatment system.

- Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Title 40 CFR Part 264.
- Present groundwater quality and hydrogeology data.
- Protect and maintain surveyed benchmarks.

In support of meeting these requirements, the following activities are performed:

- Inspections of the CERCLA Landfill final cover;
- Inspections of the LCS;
- Inspection of the Scrubber Sludge Ponds; and
- Annual groundwater monitoring in accordance with the SAP.

The layout of the CERCLA Landfill is provided on Figure 2. Landfill leachate production and quality data for the CERCLA Landfill are provided in Tables 3 and 4, respectively. Chart 6 presents the CERCLA leachate production rate versus precipitation data.

3.1 CERCLA LANDFILL AND LCS INSPECTIONS

The CERCLA Landfill is inspected annually to detect and repair, if necessary, defects in the landfill cover. The CERCLA LCS is inspected quarterly to detect and repair, if necessary, defects in the infrastructure in accordance with the 1989 Consent Decree and the RCRA Post-Closure Care Permit.

Annual inspection of the CERCLA Landfill consists of the following:

- Cover inspection (checking for erosion, slumping, animal burrows, woody vegetation, and survey benchmarks),
- Fence and gate inspection (checking fence and gate integrity and ensuring that warning signs are in place),
- Drainage system inspection (checking for ponded water or blockages in the channels or culvert and checking cap drain discharge pipes), and

- Inspection of the area adjacent to the landfill (checking for riprap erosion, ponded water, silt deposits, and damaged well heads).

The quarterly CERCLA LCS inspection consists of the following:

- Inspecting the lift station pumps and alarm lights,
- Inspecting the piping, and
- Inspecting CERCLA tank integrity.

The following CERCLA inspections were performed during the reporting period for this report:

Inspection	4th Quarter 2017	1st Quarter 2018
CERCLA Landfill	December 11, 2017*	March 22, 2018*
CERCLA LCS	December 17, 2017	March 22, 2018

*Note: In addition to the required annual CERCLA Landfill inspection, the CERCLA Landfill was also voluntarily inspected during the fourth and first (March 2018) quarter inspection period (Section 2.0, Amec Foster Wheeler, 2015b). Next required inspection due June 2018.

All items were found to be in good condition during the quarterly inspections in December 2017 and March 2018. Quarterly inspection forms for this reporting period are provided in Appendix F.

3.2 SCRUBBER SLUDGE PONDS INSPECTION

The Scrubber Sludge Ponds are inspected annually as well as following a significant precipitation event (2.5 inches of precipitation in a 24-hour period per the Post-Closure Care Permit). The annual inspection includes the following:

- Cover inspection (checking for erosion, animal burrows, and exposed sludge),
- Drainage system (checking for ponded water and sedimentation or blockage in ditches and culverts),
- Fence and gate inspection (checking fence and gate integrity and ensuring that warning signs are in place, as well as checking that the fence is clear of trees and debris), and

- Inspection of the area adjacent to the Scrubber Sludge Ponds (vegetation control and intrusions).

The annual inspection form from June 2017 is provided in Appendix G. No significant precipitation events occurred during the reporting period. Covering of exposed sludge, filling animal burrows, fence repair, and tree removal were performed in response to items identified for correction during the annual inspection. All other items inspected were in good condition.

3.3 CERCLA LANDFILL LEACHATE COLLECTION, TREATMENT, SAMPLING AND ANALYSIS, AND DISCHARGE

The following sections describe activities associated with the CERCLA LCS between October 2017 and March 2018.

3.3.1 Background

The CERCLA LCS operates as a perimeter groundwater containment system, which consists of perforated pipe buried in a covered collection trench, surrounds three sides of the landfill (Figure 2) and captures both shallow groundwater from the Perched Zone and leachate that migrates to the shallow groundwater. Leachate and shallow groundwater drains under gravity to two lift stations; Lift Station 2 pumps leachate over a rock outcrop to Lift Station 1, and Lift Station 1 pumps directly to the CERCLA Treatment System. Discharge of treated leachate and shallow groundwater is then conveyed to the City of The Dalles Publicly Owned Treatment Works (POTW) system. Discharge to the POTW is conducted under City of The Dalles Industrial Pretreatment Program under Permit Number 2016-003.

3.3.2 CERCLA Landfill Leachate Collection

Total influent to the CERCLA Leachate Treatment System during the reporting period (October 2017 through March 2018) was 543,200 gallons. Table 3 presents monthly LCS flows measured at Lift Stations 1 and 2. Table 3 also presents monthly precipitation data totals. Increases in leachate production lag slightly behind increases in precipitation as shown on Chart 6.

3.3.3 Treatment

An ion exchange resin treatment system was constructed at the CERCLA facility in the fall of 2014. The CERCLA Treatment System uses ion exchange resin media to remove cyanide compounds from the combined CERCLA Landfill leachate and shallow groundwater that are collected in the LCS and conveyed to the Treatment System from Lift Station 1. The CERCLA Treatment System is located within the CERCLA Building located within the CERCLA secondary containment. Untreated leachate is first conveyed through particulate bag filters to remove solids before treatment in a series (ion exchange media in lead and lag vessels) configuration. After removing cyanide compounds through ion exchange in the two vessels, the treated leachate is routed through another bag filter to collect potential resin media that may have exited the vessels. The treated leachate is then conveyed to the City of The Dalles POTW system (Permit Number 2016-003).

The CERCLA Leachate Treatment System has been operating almost continuously since start-up in November 2014. The system is inspected quarterly to detect and repair, if necessary, defects in the system detected during the inspections.

On December 6, 2017, the primary resin vessel was temporarily taken off line for ion exchange media change-out. In accordance with the CERCLA operation and maintenance manual, during the change-out the primary vessel was replaced with the lag, and the lag vessel was replaced with a spare vessel containing virgin resin (Amec Foster Wheeler, 2015b). After the vessel change, spent resin from the original primary vessel was transferred to drums for profiling and disposal in accordance with the WMP (Amec Foster Wheeler, 2015c). Disposal of the resin at Columbia Ridge Landfill in Arlington, Oregon is pending pick-up and transport.

The quarterly CERCLA Leachate Treatment System inspection consists of the following:

- Testing of gauges and transmitters
- Testing of the flow meter
- Checking the building temperature sensor
- Testing autodialer alarm notification and delivery

The following CERCLA Leachate Treatment System inspections were performed during the reporting period:

Inspection	4th Quarter 2017	1st Quarter 2018
CERCLA Leachate Treatment System	December 11, 2017	March 22, 2018

All items were found to be in good condition during the quarterly inspections in December 2017 and March 2018. Quarterly inspection forms for this reporting period are provided in Appendix F.

Table 3 presents the monthly total flow volumes of influent to the LCS, flow through the CERCLA Leachate Treatment System, and monthly discharge volumes from the CERCLA tank/to the POTW during the reporting period. Table 4 presents the analytical data for samples collected from the effluent (Lift Station 1). Table 5 presents the performance monitoring data for the ion exchange treatment process after passing through the lead (mid effluent) and lag (effluent) vessels. The performance monitoring data indicate that the treatment system is operating as designed and removing total and WAD cyanide concentrations to below the limits set in the design criteria (0.1 mg/L) as measured after passing through the lag (effluent) vessel. Laboratory reports for the LCS and CERCLA Leachate Treatment System performance monitoring are included in Appendix D.

3.3.4 Sampling and Analysis

Industrial Wastewater Discharge Permit No. 2016-003 requires regular sampling of treated effluent, conducted at least monthly. In addition, leachate at Lift Stations 1 and 2 and Manholes 2 and 4 are sampled at a minimum yearly or quarterly as needed for system checks.

Leachate in the LCS (Lift Station 1 and Lift Station 2 and Manholes 2 and 4) was sampled on December 11 and 12, 2017, and March 16, 2018 (Table 4). The LCS samples were analyzed for:

- WAD cyanide by method SM 4500-CN-I;
- Total cyanide by EPA Method 335.4;
- Fluoride by EPA SW-846-9056; and

- Sulfate by EPA Method 300.0.

Results of the analytical data from the CERCLA LCS for between 2014 and 2018 are presented in Table 4. Laboratory reports and chain-of-custody documentation are provided in Appendix D.

3.3.5 POTW Discharge and Sampling

In February 2017, discharge of treated effluent to the POTW began under Industrial Wastewater Discharge Permit No. 2016-003. Semi-continuous POTW discharge replaced the previous conveyance and discharge through a multi-party National Pollutant Discharge Elimination System (NPDES) outfall. Treated leachate is conveyed to the City of The Dalles POTW collection system through a discharge pipeline that was constructed in 2016. DEQ was notified of the change in discharge method in a II.S Permit Change - Temporary Leachate Treatment Discharge Method letter dated December 14, 2016 (Lockheed Martin, 2016). A total of 531,724 gallons were discharged to the POTW during the reporting period (Table 3). Volume-weighted compliance sampling was performed at the frequency and for the analytes specified in the Industrial Discharge Permit. Analytes are total metals, biological oxygen demand, total suspended solids, total cyanide, and fluoride. Compliance sample results and discharge records were reported to the City of The Dalles in monthly Discharge Monitoring Reports (Appendix H) in accordance with the discharge permit.

3.4 CERCLA LANDFILL GROUNDWATER MONITORING

3.4.1 Objective

The groundwater monitoring wells (Figure 7) for the CERCLA annual compliance program are completed in one of three monitoring zones:

- Perched Zone: MW-5S.
- S Zone: MWR-15S, MW-26S, MWR-27S, MWR-29S, MW-38S, MW-39S, MW-40S, MW-41S, and MW-42S. MW-26S is monitored annually for water elevation only.
- A Aquifer: MW-6AA, MWR-7A, MW-12A, and MW-13A.

CERCLA monitoring well MWR-7A was previously designated as a B aquifer monitoring well. MWR-7A was reassigned to the A aquifer based on additional characterization data developed during

the Comprehensive Groundwater Investigation (Tetra Tech, Inc. 2014; AMEC, 2014d; Amec Foster Wheeler, 2015a).

The primary objective of the CERCLA groundwater monitoring program is to document that dissolved constituent concentrations remain below the Alternate Concentration Limits (ACL) or Applicable or Relevant and Appropriate Requirements (ARAR) set in the CERCLA 1988 ROD (EPA and DEQ, 1988) and 1999 Five Year Review Report (EPA, 1999) for the then-most upper aquifer (S Zone). The 2017 ESD (EPA, 2017) removed the performance standards for the Perched Zone. The value listed in the 1999 EPA five-year review for free cyanide is incorrectly stated as an ACL.

The 1988 ROD specified EPA Safe Drinking Water Act Maximum Concentration Levels (MCLs) as applicable cleanup standards for cyanide and fluoride and the Secondary Maximum Contaminant Level (SMCL) for sulfate as the cleanup standard for the deeper A aquifer. The MCLs, as listed in the 1999 EPA five-year review, for cyanide as 0.22 mg/L, fluoride as 4 mg/L, and the SMCL for sulfate as 250 mg/L. The cyanide MCL was incorrectly identified as 0.22 mg/L in the 1999 EPA five-year, is based on free cyanide concentrations, which are currently measured as WAD cyanide. The below listed ACLs, ARAR, and MCLs are used for evaluating protectiveness of the CERCLA Landfill remedy:

- Free cyanide (represented by WAD cyanide): 0.77 mg/L S Zone and 0.20 mg/L A Aquifer;
- Fluoride: 9.7 mg/L S Zone and 4.0 mg/L A Aquifer; and
- Sulfate: 3,020 mg/L S Zone and 250 mg/L A Aquifer.

3.4.2 2018 Annual CERCLA Landfill Monitoring Well Sampling

Annual CERCLA compliance groundwater sampling was conducted from March 14 through 21, 2018. The samples were collected in accordance with the updated project SAP, approved under a II.S permit modification (Amec Foster Wheeler, 2017a). Samples were collected with either dedicated bladder pumps or with a peristaltic pump using pre-installed, dedicated tubing using EPA low- flow sampling techniques. At each well, field groundwater quality parameters (turbidity, dissolved oxygen, pH, specific conductivity, ORP, and temperature) were measured and recorded. Groundwater sampling field forms are presented in Appendix C.

The groundwater samples were collected using laboratory-supplied bottles, placed on ice, and transported under Chain of Custody to the contract laboratory, Apex in Tigard, Oregon, for analysis. Apex is accredited by the State of Oregon Environmental Laboratory Accreditation Program (ORELAP OR100062) and is an approved laboratory for analysis of the CERCLA groundwater samples. Groundwater samples were analyzed for:

- WAD cyanide by method SM 4500-CN-I;
- Total cyanide by EPA Method 335.4;
- Fluoride by EPA SW-846-9056; and
- Sulfate by EPA Method 300.0.

The analytical reports are provided in Appendix D. Validation of the data was completed on April 3 and 17, 2018 (See Appendix E). Data collected from March 2017 through March 2018 are presented in Table 6. Groundwater quality data are presented graphically in Charts 9 through 14. The CERCLA groundwater quality analytical results for WAD cyanide, total cyanide, fluoride, and sulfate are shown on Figure 8.

3.4.3 Water Level Measurements

The CERCLA Landfill groundwater monitoring program includes measuring of water levels in monitoring wells. The reference points for determining water level elevations are the tops of the protective well casings, which have been surveyed relative to msl (NAVD88). To reduce variation in groundwater level measurements, static water levels are measured on the same day for all wells and before the wells are purged and sampled. Groundwater levels were measured to the nearest 0.01 foot at all wells using an electronic water level meter. Groundwater measurements from March 14, 2018 are included in Table 1. Groundwater elevation data are presented graphically in Charts 7 and 8 and Figures 5, 9, and 10.

3.5 HYDROGEOLOGY

The stratigraphy and hydrogeology of the Site are outlined in Section 2.4. As described in Section 3.4.1, the CERCLA wells are completed in the Perched Zone, the S Zone, or the A aquifer.

3.5.1 Groundwater Flow

Groundwater levels were measured and evaluated to assess the magnitude and direction of the hydraulic gradient. Water levels in all CERCLA groundwater monitoring wells were measured and recorded on March 14, 2018. These water levels, along with water levels collected for the Comprehensive Groundwater Investigation program, were used to prepare potentiometric surface maps for the Perched Zone (Figure 9); S Zone (Figure 5); and A aquifer (Figure 10).

3.5.2 Water Level Variations

During March 2018, groundwater elevations in the area of the CERCLA Landfill for the S Zone ranged from 94.32 feet above msl in well MW-40S to 127.30 feet above msl in MWR-27S. Groundwater elevations for the A aquifer ranged from 71.12 feet above msl in wells MW13-02A to 83.47 feet above msl in MW13-06A.

Charts 7 and 8 present CERCLA groundwater hydrographs in the S Zone and A Aquifer, respectively, over time. In general, seasonal fluctuations are evident, however the seasonal range of fluctuations remains relatively unchanged. Some water levels within the S Zone exhibit a slight increase since approximately March 2011. Water level elevations for the A aquifer continue a pronounced upward trend since 2001, with the highest water level elevations on record measured for all four of the wells completed in the A Aquifer measured during March/April 2015.

3.6 DATA VALIDATION RESULTS

The groundwater monitoring results for the CERCLA Landfill monitoring were reviewed in accordance with the Data Validation Checklist (See Appendix E). Documentation provided in the analytical data package was acceptable. Data quality was acceptable and results from these samples may be considered usable with the limitations described in the data validation checklist. Data qualifiers added during validation are summarized below:

- Amec Foster Wheeler J-qualified (estimated) one primary (MWR-7A) and one duplicate (DUP06) result for WAD cyanide as having a high field duplicate relative percent difference. A list of qualified data is presented in the data validation checklist (Appendix E).

Based on the data validation, 100 percent of the data should be considered useable, meeting the SAP-specified minimum completeness goal of 90 percent.

3.7 MARCH 2018 GROUNDWATER QUALITY SUMMARY

Table 6 includes groundwater quality data from March 2017 through March 2018 for CERCLA monitoring wells.

In March 2018, all concentrations of detected constituents are below their identified ARAR (Table 6). Samples analyzed for WAD cyanide were compared to the free cyanide ARAR. Total cyanide concentrations ranged from non-detect (less than 0.0050 mg/L) in MWR-29S to 5.31 mg/L (MWR-27S). WAD cyanide concentrations ranged from non-detect (less than 0.0050 mg/L) in monitoring wells MW-13A, MW-39S, and MWR-29S to 0.157 mg/L (MWR-15S). Fluoride concentrations ranged from 0.379 mg/L (MW-41S) to 7.92 J mg/L (estimated; MW-5S). Sulfate concentrations ranged from 7.85 mg/L (MW-42S) to 595 mg/L (MWR-29S).

4.0 COMPREHENSIVE GROUNDWATER INVESTIGATION PROGRAM

This section summarizes the scope of work completed to implement the recommended long term Comprehensive Groundwater Monitoring Program presented in Table 5 of the Final Second Technical Memorandum (Amec Foster Wheeler, 2015d). The sampling focused on additional groundwater monitoring at wells installed in September 2015, resampling of locations with rejected January 2015 cyanide data to develop four consecutive quarters of groundwater quality data, and semi-annual sampling of the groundwater monitoring network at locations not routinely sampled as part of the RCRA and CERCLA Landfill programs or locations with less than five years of monitoring data. The scope of work was completed in accordance with the Final Work Plan (Tetra Tech, Inc. 2014), associated addenda (AMEC, 2014a,b,c; Amec Foster Wheeler, 2015a), and Table 5 of Final Second Technical Memorandum (Amec Foster Wheeler, 2015d).

4.1 OBJECTIVE

In the 2013 EPA five-year review, EPA recommended implementing a comprehensive site-wide groundwater characterization investigation to refine the understanding of groundwater flow and contaminant transport at the Site and to evaluate the effectiveness of the groundwater monitoring

network. EPA directed Lockheed Martin to prepare a Work Plan for a Comprehensive Site-Wide Groundwater Investigation and develop and implement a Comprehensive Site-Wide Groundwater Monitoring Program in a letter dated September 20, 2013. The Work Plan responding to this EPA directive was prepared and subsequently approved by the EPA (Tetra Tech, Inc. 2014).

Section 2.4 of the Work Plan (Tetra Tech, Inc. 2014) identified three data gaps and associated data needs:

- Characterization and groundwater monitoring of the Perched Zone;
- Groundwater monitoring and characterization in the S Zone for areas east and downgradient of the Scrubber Sludge Ponds and the former main plant area; and
- Groundwater characterization and monitoring near recently demolished former operating areas of the plant.

The field activities completed after well installation and the initial rounds of sampling were reported in the First Technical Memorandum and Final Second Technical Memorandum (AMEC, 2014d; Amec Foster Wheeler, 2015d, respectively). The field activities for the additional groundwater monitoring conducted between December 2015 and September 2017 are documented in the Site Combined Annual RCRA and CERCLA Monitoring Reports and Semiannual RCRA Monitoring Reports (Amec Foster Wheeler, 2016a, b, 2017b). The March 2018 groundwater monitoring events conducted as recommended in the Final Second Technical Memorandum are summarized in Section 4.3. Findings from the work are presented in Section 4.5.

4.2 CLEANUP LEVELS

The 1988 EPA ROD established ARARs for evaluating groundwater quality. The ARAR was incorrectly identified as an ACL for free cyanide in the 1999 EPA five-year review. The ARAR for free cyanide of 0.77 mg/L was established for groundwater quality in the then-defined uppermost aquifer (S Zone). Two ACLs were established for groundwater quality in the then-defined uppermost aquifer (S Zone) for fluoride (9.7 mg/L) and sulfate (3,020 mg/L).

The 1988 ROD specified MCLs as applicable cleanup standards for cyanide and fluoride and the SMCL for sulfate as the cleanup standard for the deeper A and B aquifers. The MCLs, as listed in the 1999 EPA five-year review, for cyanide is 0.22 mg/L, fluoride is 4 mg/L, and the SMCL for sulfate is 250 mg/L. The cyanide MCL was incorrectly identified as 0.22 mg/L in the 1999 EPA five-year review. The correct value of 0.20 mg/L used for this evaluation, is based on free cyanide concentrations, which are currently measured as WAD cyanide. WAD cyanide provides a conservative estimate of free cyanide, since it will detect both the free form and the disassociated complexes.

The 2013 EPA five-year review indicated that carcinogenic polycyclic aromatic hydrocarbons (cPAH) compounds should be considered as constituents of concern (COCs) at the Site, with MCLs being the relevant comparison basis. This has not been promulgated in an ESD, but is considered in discussion of the analytical data collected for the Comprehensive Groundwater Monitoring Program.

4.3 GROUNDWATER MONITORING

Groundwater monitoring consisted of manual water level measurements, monitoring of pressure transducers in MW13-01P and MW13-01S, and the collection of groundwater samples for chemical testing in March 2018. Monitoring well locations are shown on Figure 3.

4.3.1 Monitoring Activities

Groundwater samples were collected using EPA low-flow sampling techniques consistent with the Work Plan. At each well, field groundwater quality parameters (turbidity, dissolved oxygen, pH, specific conductivity, ORP, and temperature) were measured and recorded. The field records are found in Appendix C.

The groundwater samples were collected using laboratory-supplied bottles, placed on ice, and transported under chain-of-custody to the contract laboratory, Apex in Tigard, Oregon, for analysis. Apex is accredited by ORELAP (OR100062).

Apex analyzed the samples for one or more of the following:

- WAD cyanide by EPA Method 4500-CN-I;

- Total cyanide by EPA Method 335.4;
- Fluoride by EPA Method SW-846-9056; and
- Sulfate by EPA Method 300.0.

Data from 2014 through the March 2018 sampling event is included in Tables 7 and 8. The laboratory reports are provided in Appendix D. Data validation reports are presented in Appendix E.

4.3.2 Water Level Measurements

Water level monitoring was also conducted at 50 locations on March 14, 2018. Groundwater levels were measured to the nearest 0.01 foot at all wells sampled using an electronic water level meter. The depth to groundwater was also measured in sampled wells on the day of sampling. Tabulated water level measurements are presented in Table 1. Beginning in December 2014, groundwater levels in MW13-01P and MW13-01S were also measured using pressure transducers to support conceptual site model development for the Perched and S Zones. Instrument Northwest PT2X pressure transducers fitted with vented, direct-read communication cables were used to measure water levels at one-hour frequencies over the monitoring period. Groundwater elevations recorded at MW13-01P and MW13-01S are presented in Appendix I.

4.4 HYDROGEOLOGY

4.4.1 Groundwater Gradients and Flow Directions

A potentiometric surface map was prepared for the Perched Zone (Figure 9), S Zone (Figure 5), and A Aquifer (Figure 10) monitoring wells using water levels measured on March 14, 2018. The water level measurements are summarized in Table 1.

Water levels were measured near the RCRA Landfill in March 2018 to evaluate groundwater flow in the Perched and S Zones in this portion of the Site. Well MW-5S, which was installed in 1987 to monitor the RCRA Landfill, is screened in the interval above the Byron Interbed, based on available logs, which have limited detail. Because the monitored interval at well MW-5S may be representative of either the Perched or S zones, the water levels from March 2018 for this well along with the Perched

Zone wells MW15-18P, MW15-20P, and MW13-13P installed in September 2015 are shown on the March 2018 Perched Zone potentiometric surface map.

In the Perched Zone, the March 2018 horizontal direction of groundwater flow near the RCRA Landfill is generally to the east-northeast to east with localized southeast flow near MW13-13P (Figure 9). In the S Zone, the March 2018 overall horizontal groundwater flow direction near the RCRA Landfill in the S Zone varies from east-northeast to south-southeast, away from a high centered near well MW-35S and toward a low near MW-36S (Figure 5).

The hydraulic gradient for the S Zone (including the S_L wells) shown on Figure 5 (March 2018) indicates that the horizontal groundwater flow direction for the S Zone for much of the Site is generally to the east to southeast, toward the Columbia River. Near the CERCLA Landfill, however, the general horizontal flow direction is to the north, towards Chenoweth Creek, which in turn drains northeastward to the Columbia River. The water levels plotted on Figure 5 also indicate locally higher groundwater elevations around wells MW13-11S, MW35-S, and MW-42S.

The horizontal groundwater flow direction in the A aquifer beneath the southeastern portion of the CERCLA Landfill is generally to the northwest away from the Columbia River (Figure 10).

4.5 DATA VALIDATION RESULTS

Data validation for the March 2018 groundwater data was completed by Wood in accordance with the Data Validation Checklist (See Appendix E) and the SAP (Amec Foster Wheeler, 2017a). Documentation provided by the laboratory was acceptable, and results from these samples may be considered usable with the limitations described in the data validation checklist. Data qualifiers added during validation are summarized in Sections 2.5 and 3.6.

Based on the data validation, 100 percent of the data from the March 2018 event is useable, meeting the SAP-specified minimum completeness goal of 90 percent.

4.6 GROUNDWATER QUALITY SUMMARY

This section compares the analytical results from the March 2018 monitoring event with the ACLs for the Perched, S, and S_L zones for fluoride and sulfate and the ARAR for cyanide. The analytical results for the A Aquifer are compared with the MCLs.

The ACLs are 9.7 mg/L for fluoride and 3,020 mg/L for sulfate and the ARAR is 0.77 mg/L for free cyanide. The MCLs are 0.20 mg/L for free cyanide and 4.0 mg/L for fluoride. The SMCL for sulfate is 250 mg/L. In addition, benzo(a)pyrene results are compared to the benzo(a)pyrene MCL of 0.2 micrograms per liter (µg/L).

Perched Zone

Analytical results for the Perched Zone are summarized in Table 7, and in Figures 11 through 14 and Figure 22 through 24. Thirteen Perched Zone monitoring wells were sampled during the March 2018 event and one WAD cyanide detection at MW13-01P (1.24 mg/L) exceeded the free cyanide comparison level of 0.77 mg/L (Table 7, Figures 11 and 22).

In March 2018, fluoride was detected in all thirteen Perched Zone monitoring wells (Figure 12 and Figure 23). Concentrations in eight wells sampled were below the ACL of 9.7 mg/L. Five locations exceeded the fluoride comparison level with concentrations ranging from 11.2 mg/L (MW15-18P) to 105 mg/L (MW13-07P).

No sulfate detections from the March 2018 sampling event exceeded the comparison level of 3,020 mg/L (Figures 13 and 24).

S Zone

Total and WAD cyanide analytical results for the S Zone are summarized in Table 7, and in Figures 15 through 18 and Figures 25 through 27. S Zone wells were sampled for total cyanide, WAD cyanide, fluoride, and sulfate. No S Zone wells were sampled for cPAHs; however, historical data is presented for comparison on Figure 18 and Table 8. Of the 26 monitoring wells sampled during March 2018, no WAD cyanide detections exceeded the ARAR for free cyanide (0.77 mg/L; Figures 15 and 25).

No fluoride or sulfate detections from the March 2018 sampling event exceeded their respective ACLs of 9.7 mg/L and 3,020 mg/L (Figures 16, 17, 26, and 27).

S_L Zone

Analytical results for the S_L Zone are summarized in Tables 7 and 8, and in Figures 15 through 18 and Figures 25 through 27. S_L Zone wells were sampled for total cyanide, WAD cyanide, fluoride, and sulfate. No S Zone wells were sampled for cPAHs; however, historical data is presented for comparison on Figure 18 and Table 8.

WAD cyanide and sulfate detections in the five S_L Zone monitoring wells (MW-5, MW13-14SL, MW13-15SL, MW15-17SL, and MW15-19SL) sampled in March 2018 did not exceed their respective ARAR or ACL (Figures 15 and 17). A single detection of fluoride at MW13-14SL (20.0 mg/L) exceeded the ACL of 9.7 mg/L during the March 2018 sampling event (Figure 16). The exceedance at this monitoring location is consistent with historical data (Table 7).

A Aquifer

Analytical results for the A Aquifer are summarized in Table 7, and in Figures 19 through 21 and Figures 28 through 30.

No MCLs or SMCLs (sulfate only) were exceeded in the seven A Aquifer wells (MWR-2A, MW-6AA, MWR-7A, MW-12A, MW-13A, MW13-02A, and MW13-06A) sampled in March 2018.

5.0 CONCLUSIONS

- There were no exceedances of free cyanide, fluoride, and sulfate groundwater protection standards at monitoring wells sampled for the semi-annual RCRA Post-Closure Care Monitoring program.
- There were no exceedances of free cyanide, fluoride, and sulfate ARAR or ACLs at monitoring wells sampled for the annual CERCLA Post-Closure Care Monitoring program.
- No exceedances of the sulfate ACL or MCLs have been observed in Site monitoring wells sampled since 2014 for the Comprehensive Groundwater Monitoring Program.

- Exceedances of the fluoride ACL are limited to monitoring wells in the S_L Zone for the Comprehensive Groundwater Monitoring Program.
- Perched Zone fluoride and free cyanide concentrations exceeding its comparison level were included for discussion only since ARARs do not apply to the Perched Zone.
- No exceedances of the free cyanide ARAR/MCL have been observed in monitoring wells in the S Zone or A Aquifer for the Comprehensive Groundwater Monitoring Program.

6.0 REFERENCES

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TABLES

TABLE 1
Water Level Measurements
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

Monitoring Zone	Location	Date	Measuring Point Elevation (ft msl)	Depth to Water (ft)	Water Level Elevation (ft msl)
Perched	MW-5S	9/19/2016	158.16	23.64	134.52
	MW-5S	3/17/2017	158.16	19.63	138.53
	MW-5S	9/25/2017	158.16	23.37	134.79
	MW-5S	3/14/2018	158.16	20.89	137.27
	MW13-01P	9/19/2016	135.47	9.73	125.74
	MW13-01P	3/17/2017	135.47	5.15	130.32
	MW13-01P	9/25/2017	135.47	10.02	125.45
	MW13-01P	3/14/2018	135.47	5.02	130.45
	MW13-02P	9/19/2016	143.23	13.04	130.19
	MW13-02P	3/17/2017	143.23	4.65	138.58
	MW13-02P	9/25/2017	143.23	13.00	130.23
	MW13-02P	3/14/2018	143.23	5.55	137.68
	MW13-03P	9/19/2016	145.30	11.99	133.31
	MW13-03P	3/17/2017	145.30	4.73	140.57
	MW13-03P	9/25/2017	145.30	11.92	133.38
	MW13-03P	3/14/2018	145.30	5.25	140.05
	MW13-04P	9/19/2016	137.31	12.07	125.24
	MW13-04P	3/17/2017	137.31	4.72	132.59
	MW13-04P	9/25/2017	137.31	12.02	125.29
	MW13-04P	3/14/2018	137.31	6.49	130.82
	MW13-05P	9/19/2016	134.00	9.91	124.09
	MW13-05P	3/17/2017	134.00	6.85	127.15
	MW13-05P	9/25/2017	134.00	10.04	123.96
	MW13-05P	3/14/2018	134.00	4.93	129.07
	MW13-06P	9/19/2016	135.56	8.91	126.65
	MW13-06P	3/17/2017	135.56	9.10	126.46
	MW13-06P	9/25/2017	135.56	8.43	127.13
	MW13-06P	3/14/2018	135.56	3.95	131.61
	MW13-07P	9/19/2016	140.32	8.76	131.56
	MW13-07P	3/17/2017	140.32	6.63	133.69
	MW13-07P	9/25/2017	140.32	8.71	131.61
	MW13-07P	3/14/2018	140.32	7.56	132.76
	MW13-08P	9/19/2016	138.02	11.98	126.04
	MW13-08P	3/17/2017	138.02	4.44	133.58
	MW13-08P	9/25/2017	138.02	12.03	125.99
	MW13-08P	3/14/2018	138.02	6.60	131.42
	MW13-10P	9/19/2016	146.57	12.47	134.10
	MW13-10P	3/17/2017	146.57	6.14	140.43
	MW13-10P	9/25/2017	146.57	12.80	133.77
	MW13-10P	3/14/2018	146.57	7.77	138.80
	MW13-12P	9/19/2016	134.91	11.70	123.21
	MW13-12P	3/17/2017	134.91	9.02	125.89
	MW13-12P	9/25/2017	134.91	11.30	123.61
	MW13-12P	3/14/2018	134.91	9.60	125.31

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Water Level Measurements
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

Monitoring Zone	Location	Date	Measuring Point Elevation (ft msl)	Depth to Water (ft)	Water Level Elevation (ft msl)
Perched (Continued)	MW15-18P	9/19/2016	143.84	9.79	134.05
	MW15-18P	3/17/2017	143.84	7.55	136.29
	MW15-18P	9/25/2017	143.84	9.67	134.17
	MW15-18P	3/14/2018	143.84	7.75	136.09
	MW15-20P	9/19/2016	141.63	19.16	122.47
	MW15-20P	3/17/2017	141.63	12.56	129.07
	MW15-20P	9/25/2017	141.63	17.32	124.31
	MW15-20P	3/14/2018	141.63	13.76	127.87
S	MW-2S	9/19/2016	113.95	21.50	92.45
	MW-2S	3/17/2017	113.95	10.19	103.76
	MW-2S	9/25/2017	113.95	20.98	92.97
	MW-2S	3/14/2018	113.95	12.33	101.62
	MW-3S	9/19/2016	140.55	11.48	129.07
	MW-3S	3/17/2017	140.55	6.81	133.74
	MW-3S	9/25/2017	140.55	11.09	129.46
	MW-3S	3/14/2018	140.55	8.83	131.72
	MWR-4S	9/19/2016	143.22	15.41	127.81
	MWR-4S	3/17/2017	143.22	6.41	136.81
	MWR-4S	9/25/2017	143.22	13.54	129.68
	MWR-4S	3/14/2018	143.22	10.70	132.52
	MWR-15S	9/19/2016	136.94	24.92	112.02
	MWR-15S	3/17/2017	136.94	22.82	114.12
	MWR-15S	9/25/2017	136.94	24.51	112.43
	MWR-15S	3/14/2018	136.94	22.62	114.32
	MW-17S	9/19/2016	151.40	19.17	132.23
	MW-17S	3/17/2017	151.40	13.27	138.13
	MW-17S	9/25/2017	151.40	18.60	132.80
	MW-17S	3/14/2018	151.40	15.59	135.81
	MW-22S	9/19/2016	155.75	25.51	130.24
	MW-22S	3/17/2017	155.75	19.63	136.12
	MW-22S	9/25/2017	155.75	25.17	130.58
	MW-22S	3/14/2018	155.75	21.27	134.48
	MW-23S	9/19/2016	143.79	14.27	129.52
	MW-23S	3/17/2017	143.79	8.22	135.57
	MW-23S	9/25/2017	143.79	13.30	130.49
	MW-23S	3/14/2018	143.79	10.24	133.55
	MW-26S	9/19/2016	135.63	12.70	122.93
	MW-26S	3/17/2017	135.63	19.79	115.84
	MW-26S	9/25/2017	135.63	21.57	114.06
	MW-26S	3/14/2018	135.63	20.05	115.58
	MWR-27S	9/19/2016	141.11	19.46	121.65
	MWR-27S	3/17/2017	141.11	12.32	128.79
	MWR-27S	9/25/2017	141.11	18.08	123.03
	MWR-27S	3/14/2018	141.11	13.81	127.30

TABLE 1
Water Level Measurements
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

Monitoring Zone	Location	Date	Measuring Point Elevation (ft msl)	Depth to Water (ft)	Water Level Elevation (ft msl)
S (Continued)	MWR-29S	9/19/2016	118.01	17.30	100.71
	MWR-29S	3/17/2017	118.01	11.46	106.55
	MWR-29S	9/25/2017	118.01	16.88	101.13
	MWR-29S	3/14/2018	118.01	11.55	106.46
	MW-35S	9/19/2016	146.76	13.80	132.96
	MW-35S	3/17/2017	146.76	7.65	139.11
	MW-35S	9/25/2017	146.76	13.23	133.53
	MW-35S	3/14/2018	146.76	9.74	137.02
	MW-36S	9/19/2016	146.45	20.61	125.84
	MW-36S	3/17/2017	146.45	15.17	131.28
	MW-36S	9/25/2017	146.45	19.55	126.90
	MW-36S	3/14/2018	146.45	16.60	129.85
	MW-37S	9/19/2016	143.64	13.42	130.22
	MW-37S	3/17/2017	143.64	6.04	137.60
	MW-37S	9/25/2017	143.64	13.28	130.36
	MW-37S	3/14/2018	143.64	8.94	134.70
	MW-38S	9/19/2016	133.19	28.15	105.04
	MW-38S	3/17/2017	133.19	21.30	111.89
	MW-38S	9/25/2017	133.19	27.95	105.24
	MW-38S	3/14/2018	133.19	22.47	110.72
	MW-39S	9/19/2016	144.66	34.51	110.15
	MW-39S	3/17/2017	144.66	36.25	108.41
	MW-39S	9/25/2017	144.66	34.28	110.38
	MW-39S	3/14/2018	144.66	35.93	108.73
	MW-40S	9/19/2016	142.97	49.33	93.64
	MW-40S	3/17/2017	142.97	49.08	93.89
	MW-40S	9/25/2017	142.97	49.02	93.95
	MW-40S	3/14/2018	142.97	48.65	94.32
	MW-41S	9/19/2016	132.94	37.50	95.44
	MW-41S	3/17/2017	132.94	35.34	97.60
	MW-41S	9/25/2017	132.94	36.16	96.78
	MW-41S	3/14/2018	132.94	35.27	97.67
	MW-42S	9/19/2016	135.19	16.95	118.24
	MW-42S	3/17/2017	135.19	11.10	124.09
	MW-42S	9/25/2017	135.19	16.73	118.46
	MW-42S	3/14/2018	135.19	11.32	123.87
	MW13-01S	9/19/2016	135.20	17.12	118.08
	MW13-01S	3/17/2017	135.20	11.55	123.65
	MW13-01S	9/25/2017	135.20	17.04	118.16
	MW13-01S	3/14/2018	135.20	11.64	123.56
	MW13-02S	9/19/2016	143.03	13.89	129.14
	MW13-02S	3/17/2017	143.03	11.52	131.51
	MW13-02S	9/25/2017	143.03	14.00	129.03
	MW13-02S	3/14/2018	143.03	8.39	134.64

TABLE 1
Water Level Measurements
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

Monitoring Zone	Location	Date	Measuring Point Elevation (ft msl)	Depth to Water (ft)	Water Level Elevation (ft msl)
S (Continued)	MW13-06S	9/19/2016	135.34	23.47	111.87
	MW13-06S	3/17/2017	135.34	19.10	116.24
	MW13-06S	9/25/2017	135.34	21.93	113.41
	MW13-06S	3/14/2018	135.34	17.15	118.19
	MW13-08S	9/19/2016	138.06	29.08	108.98
	MW13-08S	3/17/2017	138.06	25.80	112.26
	MW13-08S	9/25/2017	138.06	28.52	109.54
	MW13-08S	3/14/2018	138.06	22.90	115.16
	MW13-11S	9/19/2016	150.34	12.03	138.31
	MW13-11S	3/17/2017	150.34	5.89	144.45
	MW13-11S	9/25/2017	150.34	13.94	136.40
	MW13-11S	3/14/2018	150.34	8.86	141.48
	MW13-13S	9/19/2016	143.34	10.04	133.30
	MW13-13S	3/17/2017	143.34	8.10	135.24
	MW13-13S	9/25/2017	143.34	10.02	133.32
	MW13-13S	3/14/2018	143.34	8.35	134.99
	MW13-16S	9/19/2016	151.16	36.43	114.73
	MW13-16S	3/17/2017	151.16	33.50	117.66
	MW13-16S	9/25/2017	151.16	36.27	114.89
	MW13-16S	3/14/2018	151.16	34.47	116.69
	MW-5	9/19/2016	124.51	12.88	111.63
	MW-5	3/17/2017	124.51	9.51	115.00
	MW-5	9/25/2017	124.51	12.57	111.94
	MW-5	3/14/2018	124.51	9.98	114.53
S_L	MW13-14SL	9/19/2016	113.96	10.86	103.10
	MW13-14SL	3/17/2017	113.96	6.81	107.15
	MW13-14SL	9/25/2017	113.96	14.31	99.65
	MW13-14SL	3/14/2018	113.96	7.92	106.04
	MW13-15SL	9/19/2016	111.00	11.88	99.12
	MW13-15SL	3/17/2017	111.00	5.23	105.77
	MW13-15SL	9/25/2017	111.00	11.96	99.04
	MW13-15SL	3/14/2018	111.00	6.38	104.62
	MW15-17SL	9/19/2016	103.30	16.69	86.61
	MW15-17SL	3/17/2017	103.30	9.49	93.81
	MW15-17SL	9/25/2017	103.30	14.22	89.08
	MW15-17SL	3/14/2018	103.30	12.44	90.86
	MW15-19SL	9/19/2016	113.99	14.40	99.59
	MW15-19SL	3/17/2017	113.99	16.75	97.24
	MW15-19SL	9/25/2017	113.99	14.31	99.68
	MW15-19SL	3/14/2018	113.99	12.09	101.90

TABLE 1
Water Level Measurements
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

Monitoring Zone	Location	Date	Measuring Point Elevation (ft msl)	Depth to Water (ft)	Water Level Elevation (ft msl)
A	MWR-2A	9/19/2016	115.13	50.23	64.90
	MWR-2A	3/17/2017	115.13	43.66	71.47
	MWR-2A	9/25/2017	115.13	50.62	64.51
	MWR-2A	3/14/2018	115.13	42.77	72.36
	MW-6AA	9/19/2016	133.81	63.66	70.15
	MW-6AA	3/17/2017	133.81	60.79	73.02
	MW-6AA	9/25/2017	133.81	65.39	68.42
	MW-6AA	3/14/2018	133.81	59.80	74.01
	MWR-7A	9/19/2016	132.83	67.92	64.91
	MWR-7A	3/17/2017	132.83	61.31	71.52
	MWR-7A	9/25/2017	132.83	68.30	64.53
	MWR-7A	3/14/2018	132.83	60.39	72.44
	MW-12A	9/19/2016	144.19	75.82	68.37
	MW-12A	3/17/2017	144.19	72.80	71.39
	MW-12A	9/25/2017	144.19	77.17	67.02
	MW-12A	3/14/2018	144.19	71.87	72.32
	MW-13A	9/19/2016	142.97	74.57	68.40
	MW-13A	3/17/2017	142.97	71.51	71.46
	MW-13A	9/25/2017	142.97	75.91	67.06
	MW-13A	3/14/2018	142.97	70.65	72.32
	MW13-02A	9/19/2016	143.22	78.66	64.56
	MW13-02A	3/17/2017	143.22	72.00	71.22
	MW13-02A	9/25/2017	143.22	79.18	64.04
	MW13-02A	3/14/2018	143.22	71.10	72.12
	MW13-06A	9/19/2016	135.77	54.08	81.69
	MW13-06A	3/17/2017	135.77	50.04	85.73
	MW13-06A	9/25/2017	135.77	54.02	81.75
	MW13-06A	3/14/2018	135.77	52.30	83.47

Notes:

ft = feet

ft msl = feet above mean sea level (North American Vertical Datum of 1988 [NAVD88])

NM = not measured

TABLE 2
RCRA Landfill Groundwater Analytical Results
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F-, Anion)	Sulfate
				Method	E335.4	SM4500-CN-E	SW9056A	E300
				Groundwater Protection Standard, RCRA Landfill	-	0.77	9.7	3,020
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	mg/L	mg/L	mg/L	mg/L
Perched	MW-5S	MW-5S_20160922	9/22/2016	N	**0.402**	**0.0554**	**7.63**	**73.3**
	MW-5S	MW-5S_20170314	3/14/2017	N	**0.193**	**0.00830**	**6.60**	**49.0**
	MW-5S	MW-5S_20170921	9/21/2017	N	**0.460**	**0.0229**	**9.21**	**71.5**
	MW-5S	MW-5S_20180315	3/15/2018	N	**0.224**	**0.0126**	**7.55 J**	**20.6 J**
	MW-5S	DUP01_20180315	3/15/2018	FD	**0.202**	**0.0139**	**7.92 J**	**54.4 J**
S	MW-3S	MW-3S_20160923	9/23/2016	N	0.0047 U	0.0050 U	**0.240**	**29.8**
	MW-3S	DUP04_20160923	9/23/2016	FD	0.0047 U	0.0050 U	**0.240**	**29.9**
	MW-3S	MW-3S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**0.286**	**29.0**
	MW-3S	MW-3S_20170921	9/21/2017	N	0.00500 U	0.00500 U	**0.284**	**30.8**
	MW-3S	MW-3S_20180315	3/15/2018	N	0.00500 U	0.00500 U	**0.307**	**30.0**
	MWR-4S	MWR-4S_20160923	9/23/2016	N	**0.001 J**	0.0050 U	**0.130 J**	**51.1**
	MWR-4S	MWR-4S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**0.230**	**58.6**
	MWR-4S	MWR-4S_20170921	9/21/2017	N	0.00500 U	0.00500 U	**0.160**	**77.5**
	MWR-4S	MWR-4S_20180314	3/14/2018	N	0.00500 U	0.00500 U	**0.158**	**72.4**
	MW-17S	MW-17S_20160923	9/23/2016	N	**0.0200**	**0.0025 J**	**0.310**	**37.0**
	MW-17S	MW-17S_20170314	3/14/2017	N	**0.0252**	0.00500 U	**0.265**	**31.7**
	MW-17S	MW-17S_20170920	9/20/2017	N	**0.0192**	0.00500 U	**0.375**	**43.5**
	MW-17S	MW-17S_20180315	3/15/2018	N	**0.0179**	0.00500 U	**0.336**	**30.1**
	MW-22S	MW-22S_20160922	9/22/2016	N	**0.107**	**0.0272**	**0.420**	**45.4**
	MW-22S	MW-22S_20170314	3/14/2017	N	**0.122**	**0.00820**	**0.427**	**51.2**
	MW-22S	MW-22S_20170921	9/21/2017	N	**0.113**	**0.0101**	**0.496**	**42.7**
	MW-22S	MW-22S_20180315	3/15/2018	N	**0.155**	**0.00840**	**0.471**	**53.1**
	MW-23S	MW-23S_20160922	9/22/2016	N	**0.0206**	**0.0044 J**	**0.220**	**24.8**
	MW-23S	MW-23S_20170314	3/14/2017	N	**0.0211**	0.00500 U	**0.235**	**24.4**
	MW-23S	MW-23S_20170920	9/20/2017	N	**0.0228**	0.00500 U	**0.251**	**22.9**
	MW-23S	MW-23S_20180315	3/15/2018	N	**0.0192**	0.00500 U	**0.268**	**22.7**
	MW-35S	MW-35S_20160922	9/22/2016	N	**0.0192**	**0.0027 J**	**0.550**	**104**
	MW-35S	MW-35S_20170314	3/14/2017	N	**0.0212**	0.00500 U	**0.532**	**96.6**
	MW-35S	MW-35S_20170920	9/20/2017	N	**0.0218**	0.00500 U	**0.594**	**38.2**
	MW-35S	MW-35S_20180315	3/15/2018	N	**0.0199**	0.00500 U	**0.577**	**91.4**
	MW-36S	MW-36S_20160922	9/22/2016	N	0.0047 U	0.0050 U	**0.140 J**	**70.3**
	MW-36S	MW-36S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**0.180**	**88.1**
	MW-36S	MW-36S_20170920	9/20/2017	N	0.00500 U	0.00500 U	**0.136**	**58.8**
	MW-36S	MW-36S_20180315	3/15/2018	N	0.00500 U	0.00500 U	**0.189**	**82.7**

TABLE 2
RCRA Landfill Groundwater Analytical Results
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F-, Anion)	Sulfate
				Method	E335.4	SM4500-CN-E	SW9056A	E300
				Groundwater Protection Standard, RCRA Landfill	-	0.77	9.7	3,020
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	mg/L	mg/L	mg/L	mg/L
S (cont.)	MW-37S	MW-37S_20160920	9/20/2016	N	**0.0343**	0.0050 U	**3.88**	**23.7**
	MW-37S	MW-37S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**3.55**	**6.31**
	MW-37S	DUP01_20170314	3/14/2017	FD	0.00500 U	0.00500 U	**3.59**	**6.21**
	MW-37S	MW-37S_20170920	9/20/2017	N	**0.0500**	0.00500 U	**4.12**	**23.3**
	MW-37S	DUP01_20170920	9/20/2017	FD	**0.0479**	**0.00510 J**	**4.25**	**23.1**
	MW-37S	MW-37S_20180315	3/15/2018	N	**0.00930**	0.00500 U	**3.08**	**14.7**

Notes:

Groundwater Protection Standards from Post-Closure Care Permit, December 5, 2017, and applies to RCRA Landfill monitoring wells only

Bold indicates laboratory result detections

Grey shading indicates screening level exceedance

Comparison of WAD Cyanide to Free Cyanide screening level

- = not applicable
mg/L = milligrams per liter
U = not detected at the reporting limit
FD = field duplicate
N = normal sample
UJ = not detected at or above the stated level, which is an approximate value
J = estimated value
NT = not tested
WAD = weak acid dissociable

TABLE 3
CERCLA Leachate Collection System Production, Treatment System Volumes, and Discharge Volumes
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

Date	Precipitation (inches)	Lift Station 2			Lift Station 1				Total Leachate Managed by LCS (gallons)[1]	Total Treated Leachate Discharged (gallons)[2]
		Total (gallons)	Avg Flow (gpd)	Avg Flow (gpm)	Total (gallons)	Avg Flow (gpd)	Avg Flow (gpm)	LS 1 Net (gallons)		
Oct-17	1.60	**6,591**	213	0.1	**9,700**	346	0.2	**3,109**	**9,700**	**9,370**
Nov-17	2.42	**29,909**	965	0.7	**53,800**	1,921	1.3	**23,891**	**53,800**	**55,994**
Dec-17	1.13	**45,450**	1,466	1.0	**81,300**	2,904	2.0	**35,850**	**81,300**	**77,676**
Jan-18	1.39	**86,110**	2,778	1.9	**156,300**	5,582	3.9	**70,190**	**156,300**	**153,617**
Feb-18	0.71	**68,851**	2,221	1.5	**126,900**	4,532	3.1	**58,049**	**126,900**	**117,038**
Mar-18	0.84	**67,539**	2,179	1.5	**115,200**	4,114	2.9	**47,661**	**115,200**	**118,029**
								Totals:	**543,200**	**531,724**

Notes:

1 - Total leachate managed by the LCS as recorded by Lift Station 1 totalizer.

2 - Total treated leachate conveyed to the City of The Dalles Publicly Owned Treatment Works system (City of The Dalles Industrial Pretreatment Program Permit Number 2016-003); See Appendix H.

Precipitation Data Sources:

NOAA- NOAA National Weather Service Station Dallesport Airport, WA US GHCND:USW00024219; See Appendix B.

Definitions:

Avg = average
gpd = gallons per day
gpm = gallons per minute
LCS = leachate collection system
LS = lift station

TABLE 4
CERCLA Leachate Collection System Analytical Results
Former Martin Marietta Facility
Lockheed Martin Corporation
The Dalles, Oregon

Sample Date	CERCLA Tank						Lift Station #1				Lift Station #2				Manhole #2				Manhole #4				Notes
	Total CN (mg/L)	WAD CN (mg/L)	Free CN (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Total CN (mg/L)	WAD CN (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Total CN (mg/L)	WAD CN (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Total CN (mg/L)	WAD CN (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Total CN (mg/L)	WAD CN (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	
03/21/14	**1.87**	**0.131**	--	--	--	--	**1.81**	**0.0418**	**9.9**	**122**	**1.94**	**0.0510**	**9.0**	**215**	--	--	--	--	**2.48**	**0.167**	**16.5**	**112**	
4/8/2014	**1.53**	**0.092**	--	**6.8**	**139**	**53**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
5/28/2014	**1.48**	**0.044**	--	**10.2**	**67.6**	**14.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
06/13/2014	--	--	--	--	--	--	**2.44**	**0.024**	**10.4**	**178**	**2.58**	**0.088**	**10.6**	**315**	--	--	--	--	**2.86**	**0.127**	**18.3**	**111**	
06/27/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**33**	**0.39**	**19.1**	**941**	--	--	--	--	
08/08/2014	**1.39**	**0.0249**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Interim check
09/23/2014	--	--	--	--	--	--	**2.42**	**0.019**	**11.1**	**328**	**1.87**	**0.015**	**10.3**	**355**	**16.6**	**0.318**	**19.3**	**555**	**4.75**	**0.134**	**15.8**	**156**	
11/10/2014	**1.1**	**0.077**	--	**8.4**	**190**	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
12/15/2014	--	--	--	--	--	--	**0.211**	**0.0484**	**12.8**	**142**	**2.23**	**0.069**	**11.4**	**254**	**1.39**	**0.0198**	**17.2**	**125**	**4.83**	**0.187**	**17.6**	**132**	
12/29/2014	**0.0819**	**0.0131**	0.0050 U	**9.19**	**62.3**	**2.38**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
01/07/2015	**0.0817**	**0.0172**	0.0050 U	**9.28**	**65.4**	**2.84**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
01/14/2015	**0.0735**	**0.0151**	0.0050 U	**9.57**	**93.0**	**2.25**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
02/02/2015	**0.0333**	**0.00590**	**0.00540**	**11.2**	**131**	**2.54**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
03/05/2015	**0.0163**	**0.0065**	0.0050 U	**10.60**	**159.0**	**2.63**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
03/26/2015	--	--	--	--	--	--	**1.5**	**0.090**	**12**	**170**	**2.3**	**0.24**	**7.7**	**160**	**2.0**	**0.094**	**17**	**110**	**2.4**	**0.11**	**18**	**110**	
04/09/2015	**0.0119**	0.0050 U	0.0020 U	**10.20**	**206.0**	**2.22**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
06/25/2015	--	--	--	--	--	--	**2.8**	**0.29**	**9.4**	**330**	**3.9**	**0.45**	**9.1**	**220**	**24.0**	**2.400**	**19**	**730**	**8.3**	**0.14**	**15**	**370**	MH4 dry; Sampled MH3 instead
09/23/2015	--	--	--	--	--	--	**3.7**	**0.14**	**9.2**	**300**	**4.2**	**0.085**	**9.3**	**280**	**Insufficient Flow for Sample**				**12**	**0.28**	**14**	**490**	MH1, MH2, MH4 dry or insufficient flow for sample. MH3 results in place of MH4
12/09/2015	**0.0185**	**0.00620**	0.0050 U	**11.10**	**314**	**3.20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
12/30/2015	--	--	--	--	--	--	**2.0**	**0.089**	**11**	**94**	**4**	**0.14**	**9.1**	**190**	**1.5**	**0.067**	**17**	**54**	**1.4**	**0.035**	**15**	**65**	MH4 too low to sample; Sampled MH3 instead
01/13/2016	0.0050 U	0.0050 U	0.0050 U	**10.6**	**181**	**2.41**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
02/10/2016	0.0050 U	0.0050 U	0.0050 U	**10.7**	**146**	**4.36**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
03/15/2016	0.0050 U	0.0050 U	0.0050 U	**10.2**	**142**	**5.06**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
03/31/2016	--	--	--	--	--	--	**2.0**	**0.12**	**10**	**210**	**3.8**	**0.32**	**9.1**	**160**	**1.6**	**0.140**	**17**	**81**	**1.5**	**0.14**	**14**	**97**	MH4 Insufficient flow; Sampled MH3 instead
04/27/2016	0.0050 U	0.0050 U	0.0050 U	**11.0**	**178**	**1.51**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
06/20/2016	--	--	--	--	--	--	**2.30**	**0.166**	**8.5**	**175**	**2.12**	**0.111**	**9.3**	**343**	--	--	--	--	--	--	--	--	MH2 and MH4 dry; no sample collected
09/22/2016	--	--	--	--	--	--	**3.83**	**0.153**	**9.4**	**305**	**3.61**	**0.209**	**8.8**	**326**	**9.7**	**0.556**	**13.4**	**537**	**6.79**	**0.223**	**14.5**	**194**	
12/19/2016	**0.0056**	0.0050 U	0.0050 U	**11.1**	**242**	**2.35**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
12/21/2016	--	--	--	--	--	--	**0.659**	**0.0283**	**12.6**	**48.1**	**1.65**	**0.0417**	**6.45**	**71.2**	**0.576**	**0.0268**	**13.6**	**39.9**	**6.40**	**0.122**	**14.7**	**126**	
02/06/2017	**0.0105**	0.0050 U	0.0050 U	**10.4**	**122**	**1.11**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Batch discharge sample
03/13/2017	--	--	--	--	--	--	**1.48**	**0.0347**	**9.40**	**128**	**1.88**	**0.0430**	**9.11**	**211**	**18.3**	**1.56**	**13.2**	**47.2**	**2.46**	**0.0539**	**14.5**	**91.6**	
06/13/2017	--	--	--	--	--	--	**2.49**	**0.0692**	**9.97**	**271**	**2.90**	**0.0758**	**9.60**	**278**	**19.0**	**0.597**	**17.2**	**557**	**3.17**	**0.0693**	**15.9**	**129**	
09/20/2017	--	--	--	--	--	--	**4.24**	**0.197**	**10.5**	**257**	**3.60**	**0.109**	**10.3**	**309**	**14.1**	**0.545**	**20.9**	**695**	**6.76**	**0.128**	**17.1**	**198**	
12/11/2017	--	--	--	--	--	--	**2.71**	**0.0449**	**10.9**	**192**	**2.98**	**0.0646**	**9.95**	**193**	--	--	--	--	--	--	--	--	
12/12/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.37**	**0.147**	**16.5**	**178**	**7.26**	**0.159**	**16.8**	**173**	
03/16/2018	--	--	--	--	--	--	**1.78**	**0.0497**	**9.94**	**177**	**2.42**	**0.0617**	**9.60**	**209**	**0.853**	**0.0291**	**14.6**	**109**	**2.43**	**0.0523**	**15.9**	**105**	

Notes:

Bold = Analyte detected above the laboratory reporting limit

Qualifiers:

U = not detected at the reporting limit

Definitions:

-- = Not sampled, analyzed, or not available

CN = cyanide

mg/L = milligrams per liter

TOC = total organic carbon

WAD = Weak Acid Dissociable

TABLE 5
CERCLA Treatment System Analytical Results
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

				Total Cyanide	WAD Cyanide
			Method	E335.4	SM4500-CN-E
Location	**Sample ID**	**Sample Date**	**Sample Type**	mg/L	mg/L
MidEffluent	Midpoint	4/13/2016	N	**0.059 J**	0.060 U
Effluent	Effluent	4/13/2016	N	**0.057 J**	0.060 U
MidEffluent	MID EFFLUENT_20160512	5/12/2016	N	0.0047 U	0.0050 U
Effluent	EFFLUENT_20160512	5/12/2016	N	0.0047 U	0.0050 U
MidEffluent	MIDEFFLUENT-20160614	6/14/2016	N	0.0047 U	0.0050 U
Effluent	EFFLUENT-20160614	6/14/2016	N	0.0047 U	0.0050 U
MidEffluent	MID EFFLUENT_20160712	7/12/2016	N	0.0047 U	0.0050 U
Effluent	EFFLUENT_20160712	7/12/2016	N	0.0047 U	0.0050 U
MidEffluent	MIDEFF-20160812	8/12/2016	N	0.0047 U	0.0050 U
Effluent	EFF-20160812	8/12/2016	N	0.0047 U	0.0050 U
MidEffluent	MIDEFF-20160912	9/12/2016	N	**0.0066**	0.0050 U
Effluent	EFF-20160912	9/12/2016	N	0.0047 U	0.0050 U
MidEffluent	MIDEFF-20161107	11/7/2016	N	**0.0010 J**	0.0050 U
Effluent	EFF-20161107	11/7/2016	N	0.0047 U	0.0050 U
MidEffluent	MIDEFFLUENT_20161206	12/6/2016	N	0.00500 U	0.00500 U
Effluent	EFFLUENT_20161206	12/6/2016	N	0.00500 U	0.00500 U
MidEffluent	MID-EFF-012017	1/20/2017	N	**0.0333**	0.00500 U
Effluent	EFF-012017	1/20/2017	N	0.00500 U	0.00500 U
MidEffluent	MIDEFF-20170216	2/16/2017	N	**0.0134**	0.00500 U
Effluent	EFF-20170216	2/16/2017	N	0.00500 U	0.00500 U
MidEffluent	MID EFF- 20170313	3/13/2017	N	**0.0237**	0.00500 U
Effluent	EFF-20170313	3/13/2017	N	0.00500 U	0.00500 U
MidEffluent	MIDEFF-20170410	4/10/2017	N	**0.136**	**0.00530**
Effluent	EFF-20170410	4/10/2017	N	0.00500 U	0.00500 U
MidEffluent	MIDEFF-20170429	4/29/2017	N	**0.0367**	NT
MidEffluent	MIDEFFLUENT_051717	5/17/2017	N	**0.0118**	0.00500 U
Effluent	EFFLUENT_051717	5/17/2017	N	0.00500 U	0.00500 U
MidEffluent	MID-EFF-20170614	6/14/2017	N	**0.0266**	0.00500 U
Effluent	EFF-20170614	6/14/2017	N	0.00500 U	0.00500 U
MidEffluent	MIDEFFLUENT-071217	7/12/2017	N	0.00500 U	0.00500 U
Effluent	EFFLUENT-071217	7/12/2017	N	0.00500 U	0.00500 U
MidEffluent	MID-EFF-20170816	8/16/2017	N	0.00500 U	0.00500 U
Effluent	EFF-20170816	8/16/2017	N	0.00500 U	0.00500 U
MidEffluent	MID-EFF-20170911	9/11/2017	N	**0.252**	**0.0187**
Effluent	EFF-20170911	9/11/2017	N	0.00500 U	0.00500 U
MidEffluent	MID-EFF-20170929	9/29/2017	N	0.00500 U	0.00500 U
MidEffluent	MIDEFFLUENT_20171017	10/17/2017	N	0.00500 U	0.00500 U
Effluent	EFFLUENT_20171017	10/17/2017	N	0.00500 U	0.00500 U
MidEffluent	MIDEFFLUENT_20171117	11/17/2017	N	0.00500 U	0.00500 U
Effluent	EFFLUENT_20171117	11/17/2017	N	0.00500 U	0.00500 U

TABLE 5
CERCLA Treatment System Analytical Results
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

				Total Cyanide	WAD Cyanide
			Method	E335.4	SM4500-CN-E
Location	**Sample ID**	**Sample Date**	**Sample Type**	mg/L	mg/L
MidEffluent	MID-EFF-20171218	12/18/2017	N	0.00500 U	0.00500 U
Effluent	EFF-20171218	12/18/2017	N	0.00500 U	0.00500 U
MidEffluent	MIDEFF_20180115	1/15/2018	N	**1.88**	**0.0517**
Effluent	EFF_20180115	1/15/2018	N	0.00500 U	0.00500 U
MidEffluent	MID-EFF-20180131	1/31/2018	N	0.00500 U	0.00500 U
Effluent	EFF-20180131	1/31/2018	N	0.00500 U	0.00500 U
MidEffluent	MID-EFF-20180222	2/22/2018	N	0.00500 U	0.00500 U
Effluent	EFF-20180222	2/22/2018	N	0.00500 U	0.00500 U
MidEffluent	MID-EFF-20180313	3/13/2018	N	0.00500 U	0.00500 U
Effluent	EFF-20180313	3/13/2018	N	0.00500 U	0.00500 U

Notes:

Bold indicates laboratory result detections

mg/L = milligrams per liter

N = normal sample

-- = Not sampled, analyzed, or not available

J = estimated value

U = not detected at the reporting limit

UJ = not detected at or above the stated level, which is an approximate value

Results not validated

WAD = weak acid dissociable

TABLE 6
CERCLA Groundwater Analytical Results
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F-, Anion)	Sulfate
				Method	E335.4	SM4500-CN-E	E300	
				Comparison Level for Perched Zone	-	0.77	9.7	3,020
				ARAR or ACL for S Zone, CERCLA Landfill	-	0.77	9.7	3,020
				ARAR or MCL or SMCL for A Aquifer, CERCLA Landfill	-	0.20	4.0	250
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)
P	MW-5S	MW-5S_20170314	3/14/2017	N	**0.193**	**0.00830**	**6.60**	**49.0**
	MW-5S	MW-5S_20170921	9/21/2017	N	**0.460**	**0.0229**	**9.21**	**71.5**
	MW-5S	MW-5S_20180315	3/15/2018	N	**0.224**	**0.0126**	**7.55 J**	**20.6 J**
	MW-5S	DUP01_20180315	3/15/2018	FD	**0.202**	**0.0139**	**7.92 J**	**54.4 J**
S	MWR-15S	MWR-15S_20170315	3/15/2017	N	**4.32**	**0.0891**	**0.956**	**127**
	MWR-15S	MWR-15S_20180320	3/20/2018	N	**4.41**	**0.157**	**0.906**	**124**
	MWR-27S	MWR-27S_20170315	3/15/2017	N	**5.49**	**0.0890**	**0.329**	**79.0**
	MWR-27S	MWR-27S_20170921	9/21/2017	N	**5.59**	**0.142**	**0.409**	**90.9**
	MWR-27S	MWR-27S_20180320	3/20/2018	N	**5.31**	**0.156**	**0.363**	**91.5**
	MWR-29S	MWR-29S_20170316	3/16/2017	N	0.00500 U	0.00500 U	**2.07**	**411**
	MWR-29S	MWR-29S_20170925	9/25/2017	N	0.00500 U	0.00500 U	**1.43**	**648**
	MWR-29S	MWR-29S_20180314	3/14/2018	N	0.00500 U	0.00500 U	**1.71**	**595**
	MW-38S	MW-38S_20170316	3/16/2017	N	**0.130**	**0.00530**	**4.73**	**16.3**
	MW-38S	MW-38S_20180320	3/20/2018	N	**0.397**	**0.0106**	**5.34**	**18.5**
	MW-39S	MW-39S_20170321	3/21/2017	N	**0.0100**	0.00500 U	**0.508**	**8.28**
	MW-39S	MW-39S_20180321	3/21/2018	N	**0.00890**	0.00500 U	**0.523**	**8.73**
	MW-40S	MW-40S_20170321	3/21/2017	N	**0.180**	**0.0142**	**0.537**	**8.51**
	MW-40S	MW-40S_20180321	3/21/2018	N	**0.166**	**0.0183**	**0.553**	**8.10**
	MW-41S	MW-41S_20170321	3/21/2017	N	**0.442**	**0.00810**	**0.324**	**83.3**
	MW-41S	MW-41S_20180321	3/21/2018	N	**0.372**	**0.0226**	**0.379**	**67.1**
	MW-42S	MW-42S_20170315	3/15/2017	N	**0.424**	**0.0327**	**0.868**	**6.39**
	MW-42S	MW-42S_20180319	3/19/2018	N	**0.466**	**0.0486**	**0.847**	**7.85**
A	MW-6AA	MW-6AA_20170316	3/16/2017	N	**0.522**	**0.0265**	**0.735**	**38.4**
	MW-6AA	MW-6AA_20180320	3/20/2018	N	**0.478**	**0.0282**	**0.667**	**39.7**
	MWR-7A	MWR-7A_20170321	3/21/2017	N	**0.323**	**0.0173**	**0.773**	**20.0**
	MWR-7A	MWR-7A_20180321	3/21/2018	N	**0.277**	**0.00790 J**	**0.768**	**20.3**
	MWR-7A	DUP06_20180321	3/21/2018	FD	**0.320**	**0.0225 J**	**0.758**	**20.5**
	MW-12A	MW-12A_20170321	3/21/2017	N	**0.0542**	**0.00550**	**0.626**	**55.5**
	MW-12A	MW-12A_20180321	3/21/2018	N	**0.0541**	**0.00900**	**0.633**	**53.1**
	MW-13A	MWR-13A_20170321	3/21/2017	N	**0.00710**	0.00500 U	**0.496**	**13.2**
	MW-13A	MWR-13A_20180321	3/21/2018	N	**0.00970**	0.00500 U	**0.487**	**11.7**

Notes:

Bold indicates laboratory result detections

Grey shading indicates one or more regulatory criteria exceedance

Data reported to reporting limit

ARAR = Applicable or Relevant and Appropriate Requirement

FD = field duplicate

mg/L = milligrams per liter

MCL or SMCL= United States Environmental Protection Agency (EPA) Safe Drinking Water Act Maximum Contaminant Level or secondary MCL

N = normal sample

WAD = weak acid dissociable

Qualifiers

B = blank contamination

J = estimated result

UJ = not detected at or above the stated level, which is an approximate value

U = not detected above indicated reporting limit

TABLE 7
Groundwater Analytical Results for Non-PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Perched	EAST DWT	EAST DWT-20140730	7/30/2014	N	**0.126**	**0.0115**	**15.6**	**67.3**	NR	NR	NR	NR	NR	NR	NR	NR
	EAST DWT	EAST DWT_20141025	10/25/2014	N	**0.0672**	**0.0103**	**19.2**	**72.5**	NR	NR	NR	NR	NR	NR	NR	NR
	EAST DWT	EAST DWT_20150120	1/20/2015	N	**0.0555 J**	**0.0110**	**16.5**	**66.6**	NR	NR	NR	NR	NR	NR	NR	NR
	EAST DWT	EAST DWT_20150418	4/18/2015	N	**0.0750**	**0.0107**	**14.8**	**77.5**	NR	NR	NR	NR	NR	NR	NR	NR
	WEST DWT	WEST DWT-20140730	7/30/2014	N	**0.0470**	**0.0055**	**8.0**	**49.5**	NR	NR	NR	NR	NR	NR	NR	NR
	WEST DWT	WEST DWT_20141025	10/25/2014	N	**0.228**	**0.0039 J**	**8.05**	**120**	NR	NR	NR	NR	NR	NR	NR	NR
	WEST DWT	WEST DWT_20150120	1/20/2015	N	**0.0940**	**0.0096**	**5.6**	**41.4**	NR	NR	NR	NR	NR	NR	NR	NR
	WEST DWT	DUP02_20150120	1/20/2015	FD	**0.0850**	**0.0122**	**5.73**	**43.3**	NR	NR	NR	NR	NR	NR	NR	NR
	WEST DWT	WEST DWT_20150418	4/18/2015	N	**0.396**	**0.0045 J**	**7.1**	**72.1 J**	NR	NR	NR	NR	NR	NR	NR	NR
	PZ-01	PZ-01_20150121	1/21/2015	N	**0.0026 J**	**0.0055**	**0.51**	**10.8**	**1.16**	**12,200**	**6,610**	**690**	**10,200**	NR	**57.6**	NR
	PZ-02	PZ-02_20140724A	7/24/2014	N	NR	NR	**0.28**	**14.0**	**1.89**	NR	NR	NR	NR	NR	NR	**159**
	PZ-02	PZ-2-20140724B	7/25/2014	N	**0.0220**	**0.003 J**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	PZ-02	PZ-02_20140724C	7/28/2014	N	NR	NR	NR	NR	NR	NR	NR	NR	NR	**145**	NR	NR
	PZ-02	PZ-02_20140724D	7/28/2014	N	NR	NR	NR	NR	NR	**34,000**	**21,200**	**4,750**	**14,500**	NR	**172**	NR
	PZ-02	PZ-02_20141024	10/24/2014	N	NR	NR	**0.27**	**59.0**	NR	NR	NR	NR	NR	NR	NR	NR
	PZ-02	PZ02_20141024A	10/24/2014	N	**0.0274**	**0.0069**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	PZ-02	PZ-02_20150121	1/21/2015	N	**0.0184**	**0.0017 J**	**0.32**	**3.74**	**1.24**	**12,000**	**7,050**	**960**	**8,660**	NR	**59.0**	NR
	PZ-02	PZ-02_20150416	4/16/2015	N	**0.0176**	**0.0035 J**	**0.20**	**11.2**	NR	NR	NR	NR	NR	NR	NR	NR
	PZ-03	PZ-3-20140725	7/25/2014	N	0.0047 U	0.010 U	**0.21**	**3.56**	**1.45**	**23,700**	**11,100**	**1,760**	**5,190**	**94.0**	**105**	**146**
	PZ-03	PZ-03_20141026	10/26/2014	N	0.0047 U	0.0050 U	**0.19 J**	**4.12**	NR	NR	NR	NR	NR	NR	NR	NR
	PZ-03	PZ-03_20150121	1/21/2015	N	0.0047 U	0.0050 U	**0.31**	**3.35**	**2.77**	**13,000**	**6,880**	**814**	**5,230**	NR	**60.9**	NR
	PZ-03	PZ-03_20150416	4/16/2015	N	0.0047 U	0.0050 U	**0.10 J**	**3.13**	NR	NR	NR	NR	NR	NR	NR	NR
	P-1	P-1_20140801	8/1/2014	N	**0.0278**	**0.0061**	**5.5**	**39.9**	**25.3**	**73,200**	**36,000**	**5,120**	**111,000**	**423**	**331**	**666**
	P-1	P-1_20141025	10/25/2014	N	**0.0226**	**0.0045 J**	**5.72**	**45.5**	NR	NR	NR	NR	NR	NR	NR	NR
	P-1	P-1_20150120	1/20/2015	N	**0.0427 J**	**0.0295**	**5.5**	**47.8**	**28.3**	**99,300**	**56,900**	**6,040**	**154,000**	NR	**482**	NR
	P-1	P-1_20150418	4/18/2015	N	**0.0422**	**0.0098**	**6.0**	**55.0**	NR	NR	NR	NR	NR	NR	NR	NR
	P-2	P-2_20140801	8/1/2014	N	**0.0740**	**0.0110**	**46.9**	**52.1**	NR	NR	NR	NR	NR	NR	NR	NR
	P-2	P-2_20150120	1/20/2015	N	**0.0248**	**0.0015 J**	**16.0**	**39.8**	**4.70**	**60,900**	**32,000**	**3,320**	**90,300**	NR	**284**	NR
	P-2	P-2_20150418	4/18/2015	N	**0.0515**	**0.0079**	**32.2**	**49.2**	NR	NR	NR	NR	NR	NR	NR	NR
	P-3	P-3_20140801	8/1/2014	N	**0.0047 J**	**0.0037 J**	**17.5**	**65.7**	NR	NR	NR	NR	NR	NR	NR	NR
	P-3	P-3_20141025	10/25/2014	N	**0.0079**	**0.0017 J**	**18.5**	**66.8**	NR	NR	NR	NR	NR	NR	NR	NR
	P-3	P-3_20150120	1/20/2015	N	**0.0183**	**0.0076**	**18.1**	**68.5**	**49.4**	**142,000**	**88,100**	**7,190**	**134,000**	NR	**717**	NR
	P-3	P-3_20150418	4/18/2015	N	**0.0077**	**0.0008 J**	**11.5**	**99.0**	NR	NR	NR	NR	NR	NR	NR	NR
	P-5	P-5_20150120	1/20/2015	N	**0.0017 J**	**0.0009 J**	**1.16**	**12.3**	**1.90**	**25,800**	**11,900**	**1,740**	**26,000**	NR	**114**	NR
	P-6	P-6_20150120	1/20/2015	N	0.0047 U	**0.0288**	**11.8**	**81.7**	**6.80**	**16,900**	**8,880**	**5,880**	**303,000**	NR	**78.9**	NR
	P-6	P-6_20150418	4/18/2015	N	**0.136**	**0.0167**	**6.4**	**50.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20140731	7/31/2014	N	**0.209**	**0.121**	**6.6**	**68.2**	**7.10**	**84,800**	**49,000**	**3,200**	**144,000**	**596**	**413**	**848**
	MW-5S	MW5-S-20140731S	7/31/2014	S	**0.38**	**0.14**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20140923	9/23/2014	N	**0.373**	**0.018**	**6.9**	**76.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20141024	10/24/2014	N	**0.365**	**0.0130**	**7.1**	**82.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20150123	1/23/2015	N	**0.0900**	**0.0011 J**	**10.4**	**32.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S-032515	3/25/2015	N	**0.38**	**0.031 J**	**7.1**	**60.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20150415	4/15/2015	N	**0.250**	**0.0221**	**6.6**	**54.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S-GW	9/24/2015	N	**0.33**	**0.038 J**	**6.6**	**66.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW5S_20160315	3/15/2016	N	**0.443**	**0.0398**	**6.87**	**60.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20160922	9/22/2016	N	**0.402**	**0.0554**	**7.63**	**73.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20170314	3/14/2017	N	**0.193**	**0.00830**	**6.60**	**49.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20170921	9/21/2017	N	**0.460**	**0.0229**	**9.21**	**71.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	MW-5S_20180315	3/15/2018	N	**0.224**	**0.0126**	**7.55 J**	**20.6 J**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5S	DUP01_20180315	3/15/2018	FD	**0.202**	**0.0139**	**7.92 J**	**54.4 J**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20140729A	7/29/2014	N	**58.5**	**0.625**	**11.7**	**164**	**19.5**	**70,700**	**50,000**	**14,700**	**337,000**	**807**	**383**	**1,330**
	MW13-01P	MW13-01P_20141025	10/25/2014	N	**56.5**	**0.575**	**11.9**	**140**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20150125	1/25/2015	N	**42.5**	**0.0780**	**14.8**	**139**	**18.8**	**69,000**	**47,000**	**12,500**	**400,000**	NR	**366**	NR
	MW13-01P	MW13-01P_20150418	4/18/2015	N	**49.5**	**1.38**	**10.6 J**	**74.4 J**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	DUP07_20150418	4/18/2015	FD	**47.0**	**1.59**	**15.2 J**	**129 J**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20151210	12/10/2015	N	**52.3**	**0.0282**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20160316	3/16/2016	N	**63.3**	**2.59**	**15.9**	**125**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20160621	6/21/2016	N	**45.7**	**2.63**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20160919	9/19/2016	N	**46.1**	**1.91**	**17.8**	**130**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20170315	3/15/2017	N	**52.4**	**1.04**	**19.4**	**130**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20170922	9/22/2017	N	**47.1**	**2.08**	**20.4**	**132**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	MW13-01P_20180319	3/19/2018	N	**47.7**	**1.24**	**19.9**	**130**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01P	DUP03_20180319	3/19/2018	FD	**52.0**	**0.945**	**20.0**	**129**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	MW13-02P_20140801	8/1/2014	N	**0.150**	**0.0189**	**7.3**	**111**	**31.4**	**90,600**	**45,600**	**5,410**	**104,000**	**448**	**414**	**727**
	MW13-02P	DUP06_20140801	8/1/2014	FD	**0.142**	**0.0181**	**7.3**	**111**	**31.9**	**90,700**	**45,600**	**5,370**	**104,000**	**447**	**414**	**736**
	MW13-02P	MW13-02P_20141025	10/25/2014	N	**0.144**	**0.0222**	**6.9**	**107**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	MW13-02P_20150125	1/25/2015	N	**0.189**	**0.139 J**	**4.97**	**116**	**19.9**	**85,300**	**38,700**	**5,110**	**93,900**	NR	**372**	NR
	MW13-02P	MW13-02P_20150418	4/18/2015	N	**0.177 J**	**0.0229 J**	**4.1 J**	**105 J**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	DUP06_20150418	4/18/2015	FD	**0.0102 J**	0.0050 UJ	**0.70 J**	**5.17 J**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	MW13-02P_20151209	12/9/2015	N	**0.157**	**0.0399**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	MW13-02P_20160316	3/16/2016	N	**0.172**	**0.0318**	**6.97**	**98.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	MW13-02P_20160622	6/22/2016	N	**0.103**	**0.0161**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 7
Groundwater Analytical Results for Non-PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Perched (Continued)	MW13-02P	MW13-02P_20160921	9/21/2016	N	**0.108**	**0.0290**	**6.02**	**107**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	DUP02_20160921	9/21/2016	FD	**0.104**	**0.0303**	**5.85**	**106**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	MW13-02P_20170316	3/16/2017	N	**0.143**	**0.0130**	**7.58**	**102**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	MW13-02P_20170926	9/26/2017	N	**0.113**	**0.0276**	**6.83**	**106**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02P	MW13-02P_20180320	3/20/2018	N	**0.130**	**0.0100**	**6.84**	**99.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-03P	MW13-03P_20140724	7/24/2014	N	**0.0024 J**	0.0050 U	**0.19 J**	**2.79**	**1.77**	**23,200**	**11,900**	**1,620**	**6,430**	**101**	**107**	**140**
	MW13-03P	MW13-03P_20141020	10/20/2014	N	**0.0104**	0.0050 U	**0.32**	**5.57**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-03P	MW13-03P_20150121	1/21/2015	N	**0.0011 J**	0.0050 U	**0.28**	**7.64**	**3.76**	**22,000**	**13,300**	**2,290**	**23,200**	NR	**110**	NR
	MW13-03P	DUP03_20150121	1/21/2015	FD	**0.0024 J**	0.0050 UJ	**0.24**	**7.64**	**3.40 J**	**22,400**	**13,900**	**2,310**	**24,600**	NR	**113**	NR
	MW13-03P	MW13-03P_20150416	4/16/2015	N	0.0047 U	0.0050 U	**0.21**	**10.3 J**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-03P	MW13-03P_20160317	3/17/2016	N	**0.0086**	0.0050 U	**0.24**	**11.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-03P	MW13-03P_20160923	9/23/2016	N	0.0047 U	0.0050 U	**0.29**	**12.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-03P	MW13-03P_20170321	3/21/2017	N	0.00500 U	0.00500 U	**0.274**	**12.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-03P	MW13-03P_20170926	9/26/2017	N	0.00500 U	0.00500 U	**0.333**	**12.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-03P	MW13-03P_20180321	3/21/2018	N	0.00500 U	0.00500 U	**0.234**	**10.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-04P	MW13-04P-20140725	7/25/2014	N	**0.0600**	**0.006 J**	**20.3**	**17.5**	**2.65**	**16,200**	**9,160**	**2,270**	**117,000**	**257**	**78.1**	**378**
	MW13-04P	MW13-04P_20141020	10/20/2014	N	**0.0930**	**0.0115**	**15.5**	**33.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-04P	MW13-04P_20150121	1/21/2015	N	**0.0166**	**0.0201**	**12.2**	**35.4**	**4.80**	**41,500**	**26,100**	**5,200**	**104,000**	NR	**211**	NR
	MW13-04P	MW13-04P_20150416	4/16/2015	N	**0.106**	**0.0133**	**12.4**	**30.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-04P	MW13-04P_20160317	3/17/2016	N	**0.151**	**0.0083**	**11.3**	**38.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-04P	MW13-04P_20160923	9/23/2016	N	**0.182**	**0.0249**	**9.6**	**51.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-04P	MW13-04P_20170321	3/21/2017	N	**0.143**	**0.0150**	**10.8**	**41.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-04P	MW13-04P_20170926	9/26/2017	N	**0.232**	**0.0202**	**10.0**	**61.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-04P	MW13-04P_20180321	3/21/2018	N	**0.101**	**0.0114**	**11.3**	**36.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-05P	MW13-05P_20140729	7/29/2014	N	**0.476**	**0.0212**	**5.08**	**84.6**	**10.9**	**79,100**	**42,600**	**7,260**	**89,800**	**460**	**373**	**623**
	MW13-05P	MW13-05P_20141025	10/25/2014	N	**0.252**	**0.0176**	**4.2**	**100.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-05P	MW13-05P_20150119	1/19/2015	N	**0.0030 J**	**0.0030 J**	**4.02**	**88.4**	**9.00**	**81,000**	**42,000**	**5,200**	**90,000**	NR	**375**	NR
	MW13-05P	DUP01_20150119	1/19/2015	FD	**0.215 J**	**0.0339 J**	**4.1**	**91.8**	**8.20**	**78,300**	**40,100**	**6,180**	**94,000**	NR	**361**	NR
	MW13-05P	MW13-05P_20150414	4/14/2015	N	**0.435**	**0.0485**	**4.3**	**83.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-05P	MW13-05P_20160318	3/18/2016	N	**0.475**	**0.0810**	**4.3**	**86.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-05P	MW13-05P_20160919	9/19/2016	N	**0.395**	**0.0587**	**3.78**	**85.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-05P	MW13-05P_20170315	3/15/2017	N	**0.529**	**0.0172**	**3.75**	**83.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-05P	MW13-05P_20170922	9/22/2017	N	**0.515**	**0.0424**	**4.22**	**83.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-05P	MW13-05P_20180319	3/19/2018	N	**0.499**	**0.0197**	**4.00**	**79.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06P	MW-13-06P_20140728	7/28/2014	N	**2.61**	**0.305**	**5.3**	**959**	**6.10**	**180,000**	**91,300**	**6,900**	**99,100**	**214**	**824**	**1,370**
	MW13-06P	MW13-06P_20141026	10/26/2014	N	**2.30**	**0.191**	**4.8**	**786**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06P	MW13-06P_20150124	1/24/2015	N	**0.723**	**0.145**	**4.4**	**682**	**5.00**	**169,000**	**81,300**	**10,700**	**87,900**	NR	**756**	NR
	MW13-06P	MW13-06P_20150417	4/17/2015	N	**1.64 J**	**0.148 J**	**4.6**	**541**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06P	MW13-06P_20160315	3/15/2016	N	**2.69**	**0.134**	**4.10**	**613**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06P	MW13-06P_20160921	9/21/2016	N	**2.07**	**0.343**	**3.88**	**610**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06P	MW13-06P_20170315	3/15/2017	N	**2.51**	**0.0516**	**4.12**	**597**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06P	MW13-06P_20170927	9/27/2017	N	**2.27**	**0.0719**	**4.05**	**619**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06P	MW13-06P_20180320	3/20/2018	N	**2.15**	**0.0636**	**3.95**	**590**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06P	DUP04_20180320	3/20/2018	FD	**1.96**	**0.0629**	**4.02**	**601**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-07P	MW13-07P_20140723	7/23/2014	N	**10.0**	**0.0272**	**248**	**175**	**9.80**	**3,130**	**3,860**	**3,160**	**587,000**	**515**	**23.7**	**1,410**
	MW13-07P	MW13-07P_20141022	10/22/2014	N	**12.2**	**0.080**	**208**	**188**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-07P	DUP03_20141022	10/22/2014	FD	**11.5**	**0.079**	**213**	**191**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-07P	MW13-07P_20150128	1/28/2015	N	**2.77**	**0.187**	**140**	**201**	**6.00**	**2,520**	**3,940**	**3,960**	**484,000**	NR	**22.5**	NR
	MW13-07P	MW13-07P_20150419	4/19/2015	N	**11.3**	**0.146**	**178**	**188**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-07P	MW13-17P_20160323	3/23/2016	N	**17.9**	**0.206**	**137**	**190**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-07P	MW13-07P_20160919	9/19/2016	N	**8.29**	**0.275**	**164**	**125**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-07P	MW13-07P_20170315	3/15/2017	N	**19.2**	**0.0840**	**115**	**213**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-07P	MW13-07P_20170922	9/22/2017	N	**16.8**	**0.0759**	**106**	**220**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-07P	MW13-07P_20180319	3/19/2018	N	**8.55**	**0.0505**	**105**	**86.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20140730	7/30/2014	N	**1.05**	**0.197**	**6.1**	**693**	**9.20**	**109,000**	**49,800**	**11,400**	**235,000**	**246**	**476**	**1,350**
	MW13-08P	MW13-08P_20141025	10/25/2014	N	**1.11**	**0.0248**	**4.3**	**638**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20150125	1/25/2015	N	**0.391**	**0.0940**	**4.76**	**662**	**9.60**	**123,000**	**46,500**	**13,100**	**199,000**	NR	**498**	NR
	MW13-08P	MW13-08P_20150418	4/18/2015	N	**1.51**	**0.064**	**4.3**	**656**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20151210	12/10/2015	N	**3.06**	**0.0444**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20160316	3/16/2016	N	**1.86**	**0.116**	**5.1**	**759**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20160621	6/21/2016	N	**1.25**	**0.0635**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20160920	9/20/2016	N	**1.29**	**0.353**	**4.95**	**823**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20170316	3/16/2017	N	**1.43**	**0.0214**	**5.21**	**786**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20170922	9/22/2017	N	**1.25**	**0.0373**	**5.98**	**799**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08P	MW13-08P_20180319	3/19/2018	N	**1.08**	**0.0212**	**5.18**	**787**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-09P	MW13-09P-20140725A	7/25/2014	N	NR	NR	**1.21**	**359**	**16.7**	NR	NR	NR	NR	NR	NR	**704**
	MW13-09P	MW13-09P_20140725B	7/28/2014	N	**0.0043 J**	0.0050 U	NR	NR	NR	**90,100**	**53,200**	**3,960**	**58,000**	**116**	**444**	NR
	MW13-09P	MW13-09P_20141010	10/10/2014	N	**0.0014 J**	0.010 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-09P	MW13-09P_20141010A	10/14/2014	N	NR	NR	**1.03**	**417**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-09P	MW13-09P_20150124	1/24/2015	N	0.0047 U	0.0050 UJ	**0.57**	**217**	**5.65**	**68,700**	**43,200**	**2,220**	**30,600**	NR	**350**	NR
	MW13-09P	MW13-09P_20150419	4/19/2015	N	0.0047 U	0.0050 U	**0.46**	**256**	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 7
Groundwater Analytical Results for Non-PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Perched (Continued)	MW13-10P	MW13-10P_20140723	7/23/2014	N	0.0047 U	0.0050 U	**1.9**	**136**	**23.5**	**117,000**	**99,300**	**3,600**	**105,000**	**712**	**702**	**1,020**
	MW13-10P	MW13-10P_20141022	10/22/2014	N	0.0047 U	0.0050 U	**2.2**	**185**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-10P	MW13-10P_20150124	1/24/2015	N	0.0047 U	**0.001**	**2.16**	**101**	**16.7**	**81,800**	**65,100**	**3,010**	**88,900**	NR	**473**	NR
	MW13-10P	MW13-10P_20150417	4/17/2015	N	0.0047 U	0.0050 U	**2.03**	**70.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-10P	MW13-10P_20151210	12/10/2015	N	**0.0037 J**	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-10P	MW13-10P_20160316	3/16/2016	N	0.0047 U	0.0050 U	**2.10**	**34.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-10P	MW13-10P_20160621	6/21/2016	N	0.0047 U	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-10P	MW13-10P_20160921	9/21/2016	N	0.0047 U	0.0050 U	**2.15**	**138**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-10P	MW13-10P_20170315	3/15/2017	N	0.00500 U	0.00500 U	**2.00**	**69.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-10P	MW13-10P_20170927	9/27/2017	N	0.00500 U	0.00500 U	**2.24**	**132**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-10P	MW13-10P_20180320	3/20/2018	N	0.00500 U	0.00500 U	**2.37**	**150**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11P	MW13-11P-20140725A	7/25/2014	N	NR	NR	**0.97**	**99.0**	**65.4**	NR	NR	NR	NR	NR	NR	**426**
	MW13-11P	MW13-11P_20140725B	7/28/2014	N	**0.0029 J**	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11P	MW13-11P_20140725C	7/29/2014	N	NR	NR	NR	NR	NR	NR	NR	NR	NR	**144**	NR	NR
	MW13-11P	MW13-11P_20140725D	8/1/2014	N	NR	NR	NR	NR	NR	**38,400**	**16,000**	**9,600**	**78,800**	NR	**162**	NR
	MW13-11P	MW13-11P_20141010	10/10/2014	N	**0.001 J**	0.010 U	**0.50**	**128**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11P	MW13-11P_20150124	1/24/2015	N	**0.0019 J**	0.0050 UJ	**0.38**	**98.7**	**44.0**	**38,900**	**17,500**	**9,910**	**61,900**	NR	**169**	NR
	MW13-11P	MW13-11P_20150419	4/19/2015	N	0.0047 U	0.0050 U	**0.34**	**103**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20140723	7/23/2014	N	**0.482**	**0.0227**	**11.4**	**613**	**6.30**	**129,000**	**55,600**	**3,850**	**112,000**	**114**	**550**	**1,050**
	MW13-12P	MW13-12P_20141022	10/22/2014	N	**0.303**	**0.0112**	**11.0**	**489**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20150124	1/24/2015	N	**0.001**	**0.0015**	**14.6**	**140**	**1.70**	**38,500**	**17,700**	**2,190**	**45,300**	NR	**169**	NR
	MW13-12P	MW13-12P_20150419	4/19/2015	N	**0.320**	**0.0080**	**8.8**	**469**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20151210	12/10/2015	N	**0.242 J**	**0.0195**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20160315	3/15/2016	N	**0.0600**	**0.0071**	**16.7**	**74.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20160621	6/21/2016	N	**0.323**	**0.0095**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20160921	9/21/2016	N	**0.228**	**0.0145**	**12.3**	**441**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20170315	3/15/2017	N	**0.0580**	0.00500 U	**16.0**	**65.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20170921	9/21/2017	N	**0.304**	**0.0103**	**12.3**	**408**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-12P	MW13-12P_20180320	3/20/2018	N	**0.146**	**0.00640**	**13.6**	**162**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13P	MW13-13P-20140725A	7/25/2014	N	NR	NR	**1.16**	**51.8**	**129**	NR	NR	NR	NR	NR	NR	**392**
	MW13-13P	MW13-13P_20140725B	7/28/2014	N	**0.0024 J**	0.0050 U	NR	NR	NR	**35,800**	**13,700**	**10,200**	**77,300**	**92.0**	**146**	NR
	MW13-13P	MW13-13P_20141025	10/25/2014	N	**0.0020 J**	0.0050 U	**0.44**	**56.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13P	MW13-13P_20150123	1/23/2015	N	**0.0031 J**	0.0050 UJ	**0.37**	**49.0**	**124**	**37,800**	**13,700**	**10,700**	**80,600**	NR	**151**	NR
	MW13-13P	MW13-13P_20150417	4/17/2015	N	**0.0018 J**	0.0050 U	**0.34**	**47.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16P	MW13-16P_20140723	7/23/2014	N	0.0047 U	0.0050 U	**0.4 J**	**207**	**38.4**	**141,000**	**95,400**	**5,250**	**118,000**	**634**	**744**	**1,140**
	MW13-16P	MW13-16P_20141021	10/21/2014	N	0.0047 U	**0.0013 J**	**1.2**	**215**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16P	MW13-16P_20150124	1/24/2015	N	**0.0014 J**	0.0050 UJ	**0.61**	**194**	**32.0**	**142,000**	**98,000**	**5,100**	**116,000**	NR	**757**	NR
	MW13-16P	MW13-16P_20150417	4/17/2015	N	**0.0038 J**	0.0050 U	**0.37**	**199**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	MW15-18_20151016	10/16/2015	N	**0.0040 J**	**0.0017 J**	**11.5**	**53.8**	**29.3**	**23,300**	**11,100**	**18,200**	**95,400**	**166**	**104**	**347**
	MW15-18P	MW15-18P_20151209	12/9/2015	N	**0.0043 J**	**0.0014 J**	**10.3**	**68.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	MW15-18P_20160323	3/23/2016	N	**0.0020 J**	0.0050 U	**13.0**	**24.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	DUP1_20160323	3/23/2016	FD	**0.0111 J**	0.0050 U	**13.6**	**23.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	MW15-18P_20160623	6/23/2016	N	**0.0052**	0.0050 U	**13.4**	**27.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	MW15-18P_20160920	9/20/2016	N	**0.0035 J**	**0.0019 J**	**13.9**	**53.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	MW15-18P_20161221	12/21/2016	N	**0.00600**	0.00500 U	**16.2**	**40.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	MW15-18P_20170314	3/14/2017	N	0.00500 U	0.00500 U	**14.5**	**14.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	DUP02_20170314	3/14/2017	FD	0.00500 U	0.00500 U	**14.4**	**18.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	MW15-18P_20170921	9/21/2017	N	**0.00680**	0.00500 U	**16.3**	**34.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	DUP02_20170921	9/21/2017	FD	**0.00720**	0.00500 U	**16.2**	**34.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-18P	MW15-18P_20180315	3/15/2018	N	0.00500 U	0.00500 U	**13.2**	**31.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	MW15-20_20151016	10/16/2015	N	0.0047 U	0.0050 U	**0.54**	**35.3**	**3.90**	**40,000**	**10,600**	**11,300**	**11,300**	**124**	**144**	**214**
	MW15-20P	MW15-20P_20151209	12/9/2015	N	0.0047 U	0.0050 U	**3.82**	**14.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	MW15-20P_20160323	3/23/2016	N	0.0047 U	0.0050 U	**3.35**	**19.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	MW15-20P_20160623	6/23/2016	N	**0.0035 J**	0.0050 U	**0.84**	**29.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	MW15-20P_20160920	9/20/2016	N	0.0047 U	0.0050 U	**0.80**	**30.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	DUP01_20160920	9/20/2016	FD	0.0047 U	0.0050 U	**0.80**	**30.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	MW15-20P_20161221	12/21/2016	N	0.00500 U	0.00500 U	**4.69**	**11.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	MW15-20P_20170314	3/14/2017	N	0.00500 U	0.00500 U	**3.52**	**12.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	MW15-20P_20170921	9/21/2017	N	0.00500 U	0.00500 U	**0.923**	**29.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-20P	MW15-20P_20180315	3/15/2018	N	0.00500 U	0.00500 U	**2.90**	**19.6**	NR	NR	NR	NR	NR	NR	NR	NR
S	MW-2S	MW-2S_20140729	7/29/2014	N	**0.0036 J**	**0.0009 J**	**0.16 J**	**24.2**	**5.67**	**28,100**	**9,890**	**5,470**	**8,080**	**97.3**	**111**	**174**
	MW-2S	MW-2S_20141022	10/22/2014	N	**0.0055**	**0.0014 J**	**0.20 J**	**25.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2S	MW-2S_20150128	1/28/2015	N	**0.0086**	**0.0049 J**	**0.12**	**22.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2S	MW-2S_20150416	4/16/2015	N	**0.0042 J**	**0.0022 J**	**0.11 J**	**20.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2S	MW2S_20160317	3/17/2016	N	**0.0083**	0.0050 U	**0.14 J**	**22.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2S	MW-2S_20160923	9/23/2016	N	**0.0046 J**	**0.0008 J**	**0.12 J**	**25.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2S	MW-2S_20170320	3/20/2017	N	**0.00630**	0.00500 U	**0.143**	**23.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2S	MW-2S_20170926	9/26/2017	N	0.00500 U	0.00500 U	**0.151**	**25.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2S	MW-2S_20180320	3/20/2018	N	**0.00760**	0.00500 U	**0.132**	**21.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-3S_20140730	7/30/2014	N	0.0047 U	0.0050 U	**0.27**	**31.7**	**12.8**	**20,200**	**5,870**	**8,330**	**30,900**	**107**	**74.7**	**190**
	MW-3S	MW-3S_20140923	9/23/2014	N	**0.0012 J**	0.010 U	**0.26**	**30.9**	NR	NR	NR	NR	NR	NR	NR	NR

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					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
S (Continued)	MW-3S	MW-3S_20141024	10/24/2014	N	**0.0023 J**	0.0050 U	**0.25**	**30.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-3S_20150123	1/23/2015	N	**0.0019**	0.0050 U	**0.27**	**29.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-3S-032515	3/25/2015	N	0.060 U	0.060 U	**0.27**	**29.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW3S_20150419	4/19/2015	N	0.0047 U	0.0050 U	**0.23**	**27.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-3S-GW	9/23/2015	N	0.060 U	0.060 U	**0.26**	**27.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-13R-GW	9/23/2015	FD	0.060 U	0.060 U	**0.26**	**27.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW3S_20160315	3/15/2016	N	0.0047 U	0.0050 U	**0.35**	**29.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-3S_20160923	9/23/2016	N	0.0047 U	0.0050 U	**0.24**	**29.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	DUP04_20160923	9/23/2016	FD	0.0047 U	0.0050 U	**0.24**	**29.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-3S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**0.286**	**29.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-3S_20170921	9/21/2017	N	0.00500 U	0.00500 U	**0.284**	**30.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3S	MW-3S_20180315	3/15/2018	N	0.00500 U	0.00500 U	**0.307**	**30.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20140801	8/1/2014	N	0.0047 U	0.0050 U	**0.17 J**	**111**	**1.47**	**79,400**	**21,700**	**8,620**	**9,930**	**167**	**287**	**419**
	MWR-4S	MWR-4S_20140923	9/23/2014	N	0.0047 U	0.010 U	**0.17 J**	**92.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	RCRA-DUP_20140923	9/23/2014	FD	0.0047 U	0.010 U	**0.18 J**	**91.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20141024	10/24/2014	N	0.0047 U	0.0050 U	**0.13 J**	**94.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20150123	1/23/2015	N	**0.0014**	**0.0010 J**	**0.19 J**	**66.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S-032515	3/25/2015	N	0.060 U	0.060 U	**0.12**	**95.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20150415	4/15/2015	N	0.0047 U	0.0050 U	**0.07 J**	**86.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MW-4S-GW	9/23/2015	N	0.060 U	0.060 U	**0.14 J**	**67.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20160315	3/15/2016	N	0.0047 U	0.0050 U	**0.27**	**48.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20160923	9/23/2016	N	**0.001 J**	0.0050 U	**0.13 J**	**51.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**0.230**	**58.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20170921	9/21/2017	N	0.00500 U	0.00500 U	**0.160**	**77.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-4S	MWR-4S_20180314	3/14/2018	N	0.00500 U	0.00500 U	**0.158**	**72.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-15S	MWR-15S_20140729	7/29/2014	N	**2.90**	**0.318**	**0.93**	**129**	**4.15**	**13,300**	**1,010**	**7,670**	**61,500**	**32.1**	**37.3**	**261**
	MWR-15S	DUP03_20140729	7/29/2014	FD	**2.85**	**0.355**	**0.93**	**132**	**4.28**	**12,700**	**979**	**7,530**	**58,800**	**29.9**	**35.8**	**257**
	MWR-15S	MWR-15S_20140729S	7/29/2014	S	**3.3**	**0.35**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-15S	MWR-15S_20141026	10/26/2014	N	**3.18**	**0.155**	**0.87**	**137**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-15S	MWR-15S_20150124	1/24/2015	N	**0.909**	**0.0224**	**0.95**	**117**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-15S	MWR-15S-032515	3/25/2015	N	**4.7**	**0.26**	**0.95**	**120**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-15S	MWR-15S_20150419	4/19/2015	N	**4.28**	**0.136**	**0.81**	**115**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-15S	MWR-15S_20160315	3/15/2016	N	**0.425**	**0.0695**	**0.96**	**120**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-15S	MWR-15S_20170315	3/15/2017	N	**4.32**	**0.0891**	**0.956**	**127**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-15S	MWR-15S_20180320	3/20/2018	N	**4.41**	**0.157**	**0.906**	**124**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S_20140731	7/31/2014	N	**0.0108**	**0.0046 J**	**0.55**	**36.0**	**3.76**	**66,400**	**21,800**	**6,870**	**18,900**	**233**	**256**	**332**
	MW-17S	MW-17S_20140923	9/23/2014	N	**0.0168**	**0.003 J**	**0.39**	**46.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S_20141024	10/24/2014	N	**0.0197**	**0.0026 J**	**0.50**	**35.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S_20150123	1/23/2015	N	**0.0306**	0.0050 UJ	**0.24**	**29.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S-032415	3/24/2015	N	0.060 U	0.060 U	**0.27**	**41.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S_20150415	4/15/2015	N	**0.0209**	**0.0013 J**	**0.30**	**28.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S-GW	9/24/2015	N	0.060 U	0.060 U	**0.54**	**27.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW17S_20160315	3/15/2016	N	**0.0351**	0.0050 U	**0.36**	**28.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S_20160923	9/23/2016	N	**0.0200**	**0.0025 J**	**0.31**	**37.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S_20170314	3/14/2017	N	**0.0252**	0.00500 U	**0.265**	**31.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S_20170920	9/20/2017	N	**0.0192**	0.00500 U	**0.375**	**43.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-17S	MW-17S_20180315	3/15/2018	N	**0.0179**	0.00500 U	**0.336**	**30.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20140731	7/31/2014	N	**0.102**	**0.0425**	**0.45**	**53.3**	**6.47**	**23,100**	**5,110**	**7,420**	**31,100**	**94.0**	**78.7**	**199**
	MW-22S	MW22-S-20140731S	7/31/2014	S	**0.16**	**0.030**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20140923	9/23/2014	N	**0.127**	**0.015**	**0.47**	**48.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20141024	10/24/2014	N	**0.157**	**0.0186**	**0.44**	**52.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20150123	1/23/2015	N	**0.131**	0.0050 UJ	**0.45**	**44.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S-032515	3/25/2015	N	**0.13**	**0.014 J**	**0.45**	**53.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20150415	4/15/2015	N	**0.145**	**0.0280**	**0.36**	**52.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S-GW	9/24/2015	N	**0.12**	**0.038 J**	**0.46**	**39.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW22S_20160315	3/15/2016	N	**0.164**	**0.0125 J**	**0.49**	**50.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	DUP2_20160315	3/15/2016	FD	**0.203**	**0.0193 J**	**0.49**	**50.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20160922	9/22/2016	N	**0.107**	**0.0272**	**0.42**	**45.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20170314	3/14/2017	N	**0.122**	**0.00820**	**0.427**	**51.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20170921	9/21/2017	N	**0.113**	**0.0101**	**0.496**	**42.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-22S	MW-22S_20180315	3/15/2018	N	**0.155**	**0.00840**	**0.471**	**53.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S_20140731	7/31/2014	N	**0.0199**	**0.0029 J**	**0.25**	**26.6**	**2.86**	**31,600**	**7,140**	**9,880**	**18,600**	**129**	**108**	**206**
	MW-23S	MW-23S_20140923	9/23/2014	N	**0.0350**	**0.002 J**	**0.27**	**28.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S_20141024	10/24/2014	N	**0.0372**	**0.0055**	**0.24**	**27.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S_20150123	1/23/2015	N	**0.0474**	**0.0014 J**	**0.24**	**26.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S-032415	3/24/2015	N	**0.029 J**	0.060 U	**0.25**	**26.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S_20150415	4/15/2015	N	**0.0278**	**0.0038 J**	**0.21**	**23.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S-GW	9/24/2015	N	**0.047 J**	0.060 U	**0.26**	**24.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW23S_20160315	3/15/2016	N	**0.0342**	**0.0023 J**	**0.36**	**27.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S_20160922	9/22/2016	N	**0.0206**	**0.0044 J**	**0.22**	**24.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S_20170314	3/14/2017	N	**0.0211**	0.00500 U	**0.235**	**24.4**	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 7
Groundwater Analytical Results for Non-PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
S (Continued)	MW-23S	MW-23S_20170920	9/20/2017	N	**0.0228**	0.00500 U	**0.251**	**22.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-23S	MW-23S_20180315	3/15/2018	N	**0.0192**	0.00500 U	**0.268**	**22.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-26S	MW-26S_20140729	7/29/2014	N	**0.123**	**0.0237**	**0.38**	**30.7**	**2.91**	**15,000**	**3,900**	**8,600**	**31,300**	**91.9**	**53.4**	**171**
	MW-26S	MW-26S_20141027	10/27/2014	N	**0.125**	**0.0126**	**0.36**	**30.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-26S	MW-26S_20150128	1/28/2015	N	**0.115**	**0.0138**	**0.33**	**26.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-26S	MW-26S_20150416	4/16/2015	N	**0.118**	**0.0172**	**0.31**	**26.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-26S	MW26S_20160316	3/16/2016	N	**0.136**	**0.0159**	**0.41**	**29.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-26S	MW-26S_20170316	3/16/2017	N	**0.117**	**0.00830**	**0.340**	**30.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-26S	MW-26S_20180314	3/14/2018	N	**0.102**	**0.00880**	**0.385**	**30.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MW27S-20140728	7/28/2014	N	**5.50**	**0.633**	**0.42**	**83.7**	**7.14**	**50,500**	**11,300**	**15,100**	**18,200**	**130**	**173**	**308**
	MWR-27S	MW-27S_20140728S	7/28/2014	S	**5.9**	**0.41**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MWR-27S_20141026	10/26/2014	N	**5.55**	**0.104**	**0.4 J**	**76.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MWR-27S_20150124	1/24/2015	N	**0.590 J**	**0.0870**	**0.37**	**76.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	DUP06_20150124	1/24/2015	FD	**0.482 J**	**0.0420**	**0.33**	**72.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MW-27S-032615	3/26/2015	N	**5.5**	**0.20**	**0.33**	**71.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MWR-027S_20150417	4/17/2015	N	**4.05**	**0.413**	**0.25**	**71.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MWR-27S_20160315	3/15/2016	N	**6.03**	**0.708**	**0.41**	**77.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MWR-27S_20170315	3/15/2017	N	**5.49**	**0.0890**	**0.329**	**79.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MWR-27S_20170921	9/21/2017	N	**5.59**	**0.142**	**0.409**	**90.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-27S	MWR-27S_20180320	3/20/2018	N	**5.31**	**0.156**	**0.363**	**91.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-29S	MW-29S_20140804	8/4/2014	N	**0.0015 J**	0.0050 U	**2.3**	**1,030**	**7.80**	**196,000**	**111,000**	**31,900**	**233,000**	**356**	**946**	**1,850**
	MW-29S	DUP07_20140804	8/4/2014	FD	**0.0011 J**	**0.0008 J**	**2.4**	**997**	**7.90**	**194,000**	**111,000**	**31,400**	**234,000**	**361**	**943**	**1,750**
	MW-29S	MW-29S_20141023	10/23/2014	N	**0.0013 J**	0.0050 U	**1.8**	**1,210**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-29S	MW-29S_20150122	1/22/2015	N	**0.0016 J**	0.0050 UJ	**2.58**	**591**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-29S	DUP04_20150122	1/22/2015	FD	**0.0015 J**	**0.0009 J**	**2.74**	**548**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-29S	MW-29S-032515	3/25/2015	N	0.060 U	0.060 U	**2.6**	**590**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-29S	MW-29S_20150415	4/15/2015	N	**0.0015 J**	0.0050 U	**2.3**	**494**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-29S	MW29S_20160324	3/24/2016	N	0.0047 U	0.0050 U	**2.05**	**884**	**6.57**	**140,000**	**80,800**	**24,400**	**195,000**	**316**	**683**	**1,720**
	MW-29S	MW-29S_20160922	9/22/2016	N	0.0047 U	0.0050 U	**2.02**	**1,380**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-29S	MW-29S_20161222	12/22/2016	N	0.00500 U	0.00500 U	**2.11**	**1,260**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-29S	MW-29S_20170316	3/16/2017	N	0.00500 U	0.00500 U	**2.04**	**814**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-29S	MWR29S_20160324	3/24/2016	N	**0.0046 J**	0.0050 U	**1.85**	**343**	**31.4**	**108,000**	**52,200**	**18,000**	**182,000**	**400**	**486**	**1,070**
	MWR-29S	MWR-29S_20160922	9/22/2016	N	**0.0020 J**	0.0050 U	**1.21**	**581**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-29S	DUP03_20160922	9/22/2016	FD	**0.0020 J**	0.0050 U	**1.18**	**572**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-29S	MWR-29S_20161222	12/22/2016	N	0.00500 U	0.00500 U	**3.75**	**398**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-29S	DUP01_20161222	12/22/2016	FD	0.00500 U	0.00500 U	**3.68**	**400**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-29S	MWR-29S_20170316	3/16/2017	N	0.00500 U	0.00500 U	**2.07**	**411**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-29S	MW-29S_20170925	9/25/2017	N	0.00500 U	0.00500 U	**1.43**	**648**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-29S	MWR-29S_20180314	3/14/2018	N	0.00500 U	0.00500 U	**1.71**	**595**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S_20140731	7/31/2014	N	**0.0228**	**0.0058**	**0.65**	**101**	**10.0**	**43,700**	**11,100**	**9,800**	**24,800**	**115**	**155**	**300**
	MW-35S	MW-35S_20140923	9/23/2014	N	**0.0207**	**0.002 J**	**0.63**	**102**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S_20141024	10/24/2014	N	**0.0226**	0.0050 U	**0.56**	**97.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S_20150123	1/23/2015	N	**0.0277**	**0.0051 J**	**0.52**	**96.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-135S-032415	3/24/2015	N	**0.027 J**	0.060 U	**0.58**	**98.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S-032415	3/24/2015	N	0.060 U	0.060 U	**0.59**	**98.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S_20150415	4/15/2015	N	**0.0229**	**0.0015 J**	**0.47**	**90.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S-GW	9/24/2015	N	**0.029 J**	0.060 U	**0.59**	**95.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW35S_20160315	3/15/2016	N	**0.0243**	0.0050 U	**0.63**	**92.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S_20160922	9/22/2016	N	**0.0192**	**0.0027 J**	**0.55**	**104**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S_20170314	3/14/2017	N	**0.0212**	0.00500 U	**0.532**	**96.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S_20170920	9/20/2017	N	**0.0218**	0.00500 U	**0.594**	**38.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-35S	MW-35S_20180315	3/15/2018	N	**0.0199**	0.00500 U	**0.577**	**91.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S_20140731	7/31/2014	N	**0.0017 J**	**0.0008 J**	**0.17 J**	**84.4**	**2.26**	**44,400**	**9,990**	**12,100**	**18,100**	**108**	**152**	**265**
	MW-36S	MW-36S_20140923	9/23/2014	N	**0.0024 J**	**0.001 J**	**0.18 J**	**71.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S_20141024	10/24/2014	N	**0.0022 J**	0.0050 U	**0.19 J**	**71.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S_20150123	1/23/2015	N	**0.0034**	0.0050 U	**0.16 J**	**65.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S-032415	3/24/2015	N	0.060 U	0.060 U	**0.20**	**89.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S_20150415	4/15/2015	N	**0.0026 J**	0.0050 U	**0.14 J**	**77.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S-GW	9/24/2015	N	0.060 U	0.060 U	**0.16 J**	**67.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW36S_20160315	3/15/2016	N	0.0047 U	0.0050 U	**0.25**	**84.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S_20160922	9/22/2016	N	0.0047 U	0.0050 U	**0.14 J**	**70.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**0.180**	**88.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S_20170920	9/20/2017	N	0.00500 U	0.00500 U	**0.136**	**58.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-36S	MW-36S_20180315	3/15/2018	N	0.00500 U	0.00500 U	**0.189**	**82.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S_20140731	7/31/2014	N	**0.0446**	**0.0038 J**	**4.25**	**24.4**	**3.78**	**45,000**	**22,600**	**2,510**	**45,600**	**255**	**206**	**340**
	MW-37S	MW-37S_20140923	9/23/2014	N	**0.0358**	**0.002 J**	**4.3**	**23.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S_20141024	10/24/2014	N	**0.0349 J**	**0.0016 J**	**4.3**	**19.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	DUP05_20141024	10/24/2014	FD	**0.0393 J**	**0.0023 J**	**4.6**	**20.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S_20150123	1/23/2015	N	**0.0439**	**0.0015 J**	**4.90**	**23.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S-032515	3/25/2015	N	**0.051 J**	0.060 U	**3.5**	**22.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S_20150415	4/15/2015	N	**0.0855**	**0.0041 J**	**4.1**	**22.1**	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 7
Groundwater Analytical Results for Non-PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
S (Continued)	MW-37S	DUP02_20150415	4/15/2015	FD	**0.0770**	**0.0044 J**	**4.3**	**23.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S-GW	9/24/2015	N	**0.035 J**	0.060 U	**3.9**	**22.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW37S_20160315	3/15/2016	N	**0.0204 J**	**0.0018 J**	**4.54**	**22.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	DUP3_20160315	3/15/2016	FD	**0.0505 J**	**0.0011 J**	**4.52**	**22.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S_20160920	9/20/2016	N	**0.0343**	0.0050 U	**3.88**	**23.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**3.55**	**6.31**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	DUP01_20170314	3/14/2017	FD	0.00500 U	0.00500 U	**3.59**	**6.21**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S_20170920	9/20/2017	N	**0.0500**	0.00500 U	**4.12**	**23.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	DUP01_20170920	9/20/2017	FD	**0.0479**	**0.00510 J**	**4.25**	**23.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-37S	MW-37S_20180315	3/15/2018	N	**0.00930**	0.00500 U	**3.08**	**14.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-38S	MW-38S_20140729	7/29/2014	N	**0.582**	**0.0327**	**3.33**	**48.8**	**5.52**	**35,500**	**10,400**	**11,800**	**64,300**	**210**	**131**	**312**
	MW-38S	MW-38S_20141021	10/21/2014	N	**0.920**	**0.043**	**2.72**	**58.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-38S	DUP02_20141021	10/21/2014	FD	**0.860**	**0.051**	**2.71**	**58.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-38S	MW-38S_20150121	1/21/2015	N	**0.0320**	**0.0101**	**5.3**	**20.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-38S	MW-38S-032415	3/24/2015	N	**0.48**	**0.062**	**3.9**	**37.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-38S	MW-38S_20150416	4/16/2015	N	**0.643**	**0.0417**	**3.6**	**40.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-38S	MW38S-20160323	3/23/2016	N	**0.250**	**0.0168**	**4.13**	**20.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-38S	MW-38S_20170316	3/16/2017	N	**0.130**	**0.00530**	**4.73**	**16.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-38S	MW-38S_20180320	3/20/2018	N	**0.397**	**0.0106**	**5.34**	**18.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-39S	MW39S-20140724	7/24/2014	N	**0.0083**	0.010 U	**0.62**	**8.60**	**4.44**	**8,770**	**2,220**	**5,380**	**33,400**	**103**	**31.0**	**121**
	MW-39S	MW-39S_20141020	10/20/2014	N	**0.0069**	**0.0009 J**	**0.56**	**7.74**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-39S	MW-39S_20150121	1/21/2015	N	**0.0106**	**0.0037 J**	**0.54**	**7.61**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-39S	MW-39S-032415	3/24/2015	N	0.060 U	0.060 U	**0.63**	**7.70**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-39S	MW-39S_20150416	4/16/2015	N	**0.0096 J**	**0.0023 J**	**0.56**	**7.51**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-39S	DUP03_20150416	4/16/2015	FD	**0.0118 J**	**0.0012 J**	**0.58**	**7.56**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-39S	MW39S_20160317	3/17/2016	N	**0.0089**	**0.0044 J**	**0.57**	**8.92**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-39S	MW-39S_20170321	3/21/2017	N	**0.0100**	0.00500 U	**0.508**	**8.28**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-39S	MW-39S_20180321	3/21/2018	N	**0.00890**	0.00500 U	**0.523**	**8.73**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-40S	MW40S-20140724	7/24/2014	N	**0.149**	**0.018**	**0.58**	**9.57**	**2.71**	**12,000**	**3,230**	**7,920**	**30,000**	**103**	**43.4**	**154**
	MW-40S	MW-40S_20141020	10/20/2014	N	**0.144**	**0.0194**	**0.56**	**9.42**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-40S	MW-40S_20150121	1/21/2015	N	**0.167**	**0.0033 J**	**0.60**	**8.55**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-40S	MW-40S-032415	3/24/2015	N	**0.16**	**0.010 J**	**0.57**	**8.50**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-40S	MW-40S_20150416	4/16/2015	N	**0.168**	**0.0321**	**0.53**	**8.11**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-40S	MW40S_20160317	3/17/2016	N	**0.192**	**0.0191**	**0.51**	**8.19**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-40S	MW-40S_20170321	3/21/2017	N	**0.180**	**0.0142**	**0.537**	**8.51**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-40S	MW-40S_20180321	3/21/2018	N	**0.166**	**0.0183**	**0.553**	**8.10**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	MW41S-20170725	7/25/2014	N	**0.378**	**0.030**	**0.38**	**71.7**	**14.2**	**30,100**	**8,850**	**10,600**	**30,500**	**93.3**	**112**	**246**
	MW-41S	MW-41S_20141020	10/20/2014	N	**0.395**	**0.024**	**0.36**	**71.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	MW-41S_20150121	1/21/2015	N	**0.270**	**0.0535**	**0.40**	**67.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	MW-141S-032515	3/25/2015	N	**0.38**	**0.032 J**	**0.37**	**66.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	MW-41S-032515	3/25/2015	N	**0.36**	**0.035 J**	**0.37**	**66.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	MW41-S_20150416	4/16/2015	N	**0.378**	**0.0625**	**0.30**	**65.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	MW41S_20160317	3/17/2016	N	**0.508**	**0.0565 J**	**0.41**	**68.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	DUP4_20160317	3/17/2016	FD	**0.388**	**0.106 J**	**0.42**	**68.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	MW-41S_20170321	3/21/2017	N	**0.442**	**0.00810**	**0.324**	**83.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-41S	MW-41S_20180321	3/21/2018	N	**0.372**	**0.0226**	**0.379**	**67.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-42S	MW42S-20140725	7/25/2014	N	**0.157**	**0.021**	**0.77**	**14.7**	**5.28**	**13,100**	**3,320**	**7,080**	**39,200**	**116**	**46.2**	**148**
	MW-42S	MW-42S_20141025	10/25/2014	N	**0.108**	**0.0203**	**0.84**	**9.99**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-42S	MW-42S_20150125	1/25/2015	N	**0.174**	**0.131**	**0.88**	**5.87**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-42S	MW-42S-032615	3/26/2015	N	**0.18**	**0.024 J**	**0.86**	**4.30**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-42S	MW-42S_20150418	4/18/2015	N	**0.192**	**0.0164**	**0.76**	**4.70**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-42S	MW42S_20160318	3/18/2016	N	**0.340**	**0.0640**	**0.86**	**5.38**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-42S	MW-42S_20170315	3/15/2017	N	**0.424**	**0.0327**	**0.868**	**6.39**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-42S	MW-42S_20180319	3/19/2018	N	**0.466**	**0.0486**	**0.847**	**7.85**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20140808	8/8/2014	N	**0.0850**	**0.0113**	**0.79**	**7.32**	**4.56**	**11,700**	**2,920**	**7,860**	**39,300**	**123**	**41.2**	**162**
	MW13-01S	MW13-01S_20140808S	8/8/2014	S	**0.084**	**0.015**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20141025	10/25/2014	N	**0.0500**	**0.0053**	**0.75**	**8.77**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20150125	1/25/2015	N	**0.123**	**0.0054**	**0.81**	**9.43**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20150414	4/14/2015	N	**0.140**	**0.0129 J**	**0.78**	**10.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20151209	12/9/2015	N	**0.212**	**0.0520**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20160318	3/18/2016	N	**0.303**	**0.0367**	**0.76**	**13.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20160621	6/21/2016	N	**0.214**	**0.0147**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20160919	9/19/2016	N	**0.281**	**0.0559**	**0.68**	**15.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20170315	3/15/2017	N	**0.444**	**0.0346**	**0.691**	**20.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20170922	9/22/2017	N	**0.648**	**0.0646**	**0.804**	**31.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-01S	MW13-01S_20180319	3/19/2018	N	**0.799**	**0.0789**	**0.759**	**41.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20140801	8/1/2014	N	**0.0400**	**0.0042 J**	**0.79**	**13.6**	**18.5**	**16,000**	**4,390**	**8,580**	**44,000**	**122**	**57.9**	**184**
	MW13-02S	MW13-02S_20141025	10/25/2014	N	**0.0540 J**	**0.0050 J**	**0.68**	**15.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	DUP06_20141025	10/25/2014	FD	**0.0173 J**	**0.0092 J**	**0.74**	**15.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20150125	1/25/2015	N	**0.0575**	**0.135**	**0.74**	**13.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20150418	4/18/2015	N	**0.0481**	**0.0069**	**0.54**	**13.7 J**	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 7
Groundwater Analytical Results for Non-PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
S (Continued)	MW13-02S	MW13-02S_20151209	12/9/2015	N	**0.0472**	**0.0113**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20160316	3/16/2016	N	**0.0418**	**0.0134**	**0.60**	**13.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20160622	6/22/2016	N	**0.0359**	**0.0030 J**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20160920	9/20/2016	N	**0.0421**	**0.0400**	**0.59**	**14.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20170316	3/16/2017	N	**0.0523**	**0.00560**	**0.602**	**13.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20170926	9/26/2017	N	**0.0526**	**0.00630**	**0.693**	**14.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	MW13-02S_20180320	3/20/2018	N	**0.0665**	0.00500 U	**0.630**	**14.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02S	DUP05_20180320	3/20/2018	FD	**0.0562**	**0.00730**	**0.626**	**15.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	MW13-06S_20140723	7/23/2014	N	**2.00**	**0.0645**	**1.13**	**131**	**6.41**	**52,200**	**13,200**	**14,900**	**34,400**	**126**	**185**	**350**
	MW13-06S	MW13-06S_20141026	10/26/2014	N	**1.59 J**	**0.137**	**1.24**	**164**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	DUP07_20141026	10/26/2014	FD	**1.22 J**	**0.165**	**1.35**	**178**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	MW13-06S_20150124	1/24/2015	N	**0.640**	**0.172**	**1.03**	**142**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	MW13-06S_20150417	4/17/2015	N	**1.33**	**0.159**	**1.12**	**177**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	MW13-06S_20160315	3/15/2016	N	**2.28**	**0.0960**	**1.97**	**271**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	MW13-06S_20160921	9/21/2016	N	**1.89**	**0.762**	**1.69**	**268**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	MW13-06S_20170315	3/15/2017	N	**1.94**	**0.0404**	**1.64**	**258**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	MW13-06S_20170927	9/27/2017	N	**1.69**	**0.0472**	**1.63**	**270**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06S	MW13-06S_20180320	3/20/2018	N	**2.15**	**0.0909**	**2.39**	**331**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20140730	7/30/2014	N	**0.364**	**0.140**	**0.5 J**	**221**	**37.3**	**58,000**	**14,700**	**13,300**	**76,100**	**125**	**205**	**534**
	MW13-08S	MW13-08S_20141025	10/25/2014	N	**0.298**	**0.0319**	**0.37**	**259**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20150125	1/25/2015	N	**0.400 J**	**0.095 J**	**0.30**	**258**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20150418	4/18/2015	N	**0.590**	**0.042**	**0.29**	**238**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20151209	12/9/2015	N	**0.725**	**0.0645**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20160316	3/16/2016	N	**0.820**	**0.0930**	**0.26**	**281**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20160622	6/22/2016	N	**0.555**	**0.0318**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20160921	9/21/2016	N	**0.559**	**0.118**	**0.30**	**283**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20170316	3/16/2017	N	**0.784**	**0.0447**	**0.227**	**355**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20170927	9/27/2017	N	**0.753**	**0.0234**	**0.223**	**398**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-08S	MW13-08S_20180319	3/19/2018	N	**0.685**	**0.0279**	**0.416**	**382**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20140723	7/23/2014	N	0.0047 U	0.0050 U	**0.57**	**46.8**	**18.8**	**43,800**	**12,900**	**11,100**	**47,800**	**210**	**163**	**340**
	MW13-11S	MW13-11S_20141022	10/22/2014	N	0.0047 U	0.0050 U	**0.50**	**45.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20150124	1/24/2015	N	**0.0860**	**0.0011**	**0.51**	**44.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20150417	4/17/2015	N	0.0047 U	0.0050 U	**0.40**	**40.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20151210	12/10/2015	N	0.0047 UJ	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20160316	3/16/2016	N	0.0047 U	0.0050 U	**0.52**	**45.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20160621	6/21/2016	N	0.0047 U	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	DUP01_20160621	6/21/2016	FD	0.0047 U	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20160921	9/21/2016	N	0.0047 U	0.0050 U	**0.48**	**45.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20170315	3/15/2017	N	0.00500 U	0.00500 U	**0.485**	**46.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20170927	9/27/2017	N	0.00500 U	0.00500 U	**0.459**	**49.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-11S	MW13-11S_20180320	3/20/2018	N	0.00500 U	0.00500 U	**0.499**	**47.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20140723	7/23/2014	N	0.0047 U	0.0050 U	**0.61**	**8.93**	**87.2**	**15,900**	**3,010**	**9,040**	**58,800**	**67.0**	**52.0**	**257**
	MW13-13S	DUP01_20140723	7/23/2014	FD	0.0047 U	0.0050 U	**0.61**	**8.07**	**83.3**	**16,300**	**3,060**	**9,370**	**60,600**	**66.7**	**53.3**	**229**
	MW13-13S	MW13-13S_20140730	7/30/2014	N	0.0047 U	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20140730S	7/30/2014	S	0.0050 U	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20141025	10/25/2014	N	0.0047 U	0.0050 U	**0.52**	**29.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20150123	1/23/2015	N	**0.0017 J**	0.0050 UJ	**0.48**	**29.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20150417	4/17/2015	N	0.0047 U	0.0050 U	**0.37**	**22.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20160323	3/23/2016	N	**0.0840**	0.0050 U	**0.47**	**37.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20160920	9/20/2016	N	0.0047 U	0.0050 U	**0.49**	**41.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20170314	3/14/2017	N	0.00500 U	0.00500 U	**0.537**	**43.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20170921	9/21/2017	N	0.00500 U	0.00500 U	**0.494**	**44.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-13S	MW13-13S_20180315	3/15/2018	N	0.00500 U	0.00500 U	**0.499**	**37.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S-20140728	7/28/2014	N	0.0047 U	0.010 U	**0.55**	**38.3**	**16.8**	**35,300**	**10,700**	**9,540**	**45,300**	**176**	**132**	**268**
	MW13-16S	DUP02-20140728	7/28/2014	FD	0.0047 U	0.010 U	**0.56**	**37.7**	**16.7**	**35,400**	**10,800**	**9,720**	**45,600**	**177**	**133**	**280**
	MW13-16S	MW13-16S_20141022	10/22/2014	N	0.0047 U	0.0050 U	**0.53**	**38.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20150124	1/24/2015	N	**0.0017**	**0.0008 JB**	**0.48**	**42.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20150417	4/17/2015	N	0.0047 U	0.0050 U	**0.35**	**40.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	DUP05_20150417	4/17/2015	FD	0.0047 U	0.0050 U	**0.35**	**43.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20151209	12/9/2015	N	0.0047 UJ	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	DUP02_20151209	12/9/2015	FD	0.0047 U	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20160316	3/16/2016	N	0.0047 U	0.0050 U	**0.53**	**41.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20160622	6/22/2016	N	0.0047 U	0.0050 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20160921	9/21/2016	N	0.0047 U	0.0050 U	**0.41**	**54.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20170315	3/15/2017	N	0.00500 U	0.00500 U	**0.426**	**69.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20170927	9/27/2017	N	0.00500 U	0.00500 U	**0.423**	**70.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-16S	MW13-16S_20180321	3/21/2018	N	0.00500 U	0.00500 U	**0.472**	**68.0**	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 7
Groundwater Analytical Results for Non-PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
S_L	MW-1	MW-1_20140805	8/5/2014	N	0.0047 U	0.0050 U	**0.58**	**51.2**	**19.2**	**43,200**	**17,900**	**11,300**	**43,800**	**216**	**182**	**352**
	MW-1	MW-1_20141023	10/23/2014	N	0.0047 U	0.0050 U	**0.58**	**52.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-1	DUP04_20141023	10/23/2014	FD	0.0047 U	0.0050 U	**0.57**	**51.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-1	MW-1_20150122	1/22/2015	N	0.0047 U	0.0050 UJ	**0.57**	**46.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-1	MW-1_20150415	4/15/2015	N	0.0047 U	**0.001 J**	**0.55**	**47.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2	MW-2_20140805	8/5/2014	N	0.0047 U	0.0050 U	**0.4 J**	**75.9**	**30.4**	**75,400**	**28,700**	**12,500**	**61,300**	**350**	**306**	**524**
	MW-2	MW-2_20141023	10/23/2014	N	0.0047 U	0.0050 U	**0.47**	**72.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2	MW-2_20150122	1/22/2015	N	**0.0014 J**	0.0050 UJ	**0.44**	**69.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-2	MW-2_20150415	4/15/2015	N	**0.0011 J**	0.0050 U	**0.31**	**61.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3	MW-3_20140804	8/4/2014	N	**0.0037 J**	**0.0013 J**	**1.6**	**630**	**49.1**	**144,000**	**63,700**	**25,200**	**179,000**	**422**	**622**	**1,540**
	MW-3	MW-3_20141023	10/23/2014	N	**0.0037 J**	**0.0012 J**	**1.3**	**567**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3	MW-3_20150122	1/22/2015	N	**0.0031 J**	0.0050 UJ	**2.13**	**298**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-3	MW-3_20150415	4/15/2015	N	**0.0031 J**	0.0050 U	**1.6**	**384**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-4U	MW-4U_20140805	8/5/2014	N	**0.0025 J**	0.0050 U	1.0 U	**727**	**17.7**	**223,000**	**91,200**	**86,500**	**76,700**	**398**	**934**	**1,800**
	MW-4U	MW-4U_20141023	10/23/2014	N	0.0047 U	0.0050 U	1.0 U	**724**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-4U	MW-4U_20150122	1/22/2015	N	**0.0017 J**	0.0050 UJ	**0.26 J**	**564**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-4U	MW-4U_20150414	4/14/2015	N	**0.0012 J**	**0.0020 J**	1.0 U	**762**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-4L	MW-4L_20140805	8/5/2014	N	**0.0013 J**	0.0050 U	**0.9 J**	**952**	**84.4**	**212,000**	**117,000**	**63,600**	**234,000**	**531**	**1,010**	**1,980**
	MW-4L	MW-4L_20141023	10/23/2014	N	0.0047 U	0.0050 U	**0.7 J**	**1,060**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-4L	MW-4L_20150122	1/22/2015	N	**0.0026 J**	**0.0019 J**	**0.88**	**779**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-4L	MW-4L_20150414	4/14/2015	N	**0.0016 J**	0.0050 U	**0.7 J**	**804**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-4L	DUP01_20150414	4/14/2015	FD	**0.0015 J**	**0.0014 J**	**0.6 J**	**809**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	MW-5_20140805	8/5/2014	N	0.0047 U	0.0050 U	**0.53**	**44.5**	**20.2**	**45,000**	**18,100**	**11,500**	**43,000**	**210**	**187**	**271**
	MW-5	MW-5_20141023	10/23/2014	N	0.0047 U	0.0050 U	**0.55**	**43.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	MW-5_20150122	1/22/2015	N	0.0047 U	0.0050 UJ	**0.45**	**39.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	MW-5_20150415	4/15/2015	N	0.0047 U	0.0050 U	**0.41**	**38.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	MW5_20160324	3/24/2016	N	0.0047 U	0.0050 U	**0.47**	**38.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	MW-5_20160922	9/22/2016	N	0.0047 U	0.0050 U	**0.44**	**42.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	MW-5_20170316	3/16/2017	N	0.00500 U	0.00500 U	**0.485**	**42.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	DUP04_20170316	3/16/2017	FD	0.00500 U	0.00500 U	**0.492**	**41.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	MW-5_20170925	9/25/2017	N	0.00500 U	0.00500 U	**0.529**	**47.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-5	MW-5_20180314	3/14/2018	N	0.00500 U	0.00500 U	**0.504**	**45.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	MW13-14SL_20140730	7/30/2014	N	**0.0515**	**0.0113**	**15.1**	**452**	**4.20**	**61,200**	**21,100**	**4,490**	**202,000**	**185**	**240**	**918**
	MW13-14SL	MW13-14SL_20141027	10/27/2014	N	**0.0515**	**0.0051**	**9.8**	**669**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	MW13-14SL_20150122	1/22/2015	N	**0.0278**	**0.0013 J**	**19.2**	**143**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	MW13-14SL_20150419	4/19/2015	N	**0.0620**	**0.0067**	**14.8**	**310**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	MW13-14SL_20160324	3/24/2016	N	**0.0870**	**0.0088**	**33.2**	**236**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	MW13-14SL_20160922	9/22/2016	N	**0.0676**	**0.0091**	**19.1**	**386**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	MW13-14SL_20170316	3/16/2017	N	**0.0972**	**0.0135**	**40.5**	**244**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	MW13-14SL_20170926	9/26/2017	N	**0.110**	**0.0134**	**26.1**	**418**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	DUP03_20170926	9/26/2017	FD	**0.110**	**0.0126**	**25.8**	**413**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-14SL	MW13-14SL_20180315	3/15/2018	N	**0.0289**	**0.00520**	**20.0**	**196**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	MW13-15SL_20140730	7/30/2014	N	**0.0023 J**	**0.0011 J**	**0.9 J**	**438**	**75.1**	**82,300**	**36,500**	**14,800**	**155,000**	**228**	**356**	**976**
	MW13-15SL	DUP04_20140730	7/30/2014	FD	**0.0022 J**	**0.0012 J**	**0.9 J**	**430**	**75.6**	**81,300**	**37,700**	**15,400**	**164,000**	**232**	**358**	**968**
	MW13-15SL	MW13-15SL_20141027	10/27/2014	N	**0.0021 J**	0.0050 U	**0.58**	**316**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	MW13-15SL_20150122	1/22/2015	N	**0.0088**	0.0050 UJ	**4.54**	**1,020**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	MW13-15SL_20150419	4/19/2015	N	**0.0073**	0.0050 U	**5.4**	**771**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	MW13-15SL_20160324	3/24/2016	N	**0.0210**	**0.0013 J**	**6.3**	**1,150**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	DUP5_20160324	3/24/2016	FD	**0.0229**	**0.0015 J**	**5.8**	**1,150**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	MW13-15SL_20160922	9/22/2016	N	**0.0052**	0.0050 U	**2.16**	**1,090**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	MW13-15SL_20170316	3/16/2017	N	**0.0164**	0.00500 U	**3.65**	**1,240**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	DUP05_20170316	3/16/2017	FD	**0.0159**	0.00500 U	**3.63**	**1,250**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	MW13-15SL_20170926	9/26/2017	N	**0.0147**	0.00500 U	**3.34**	**1,200**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-15SL	MW13-15SL_20180315	3/15/2018	N	**0.0165**	0.00500 U	**4.63**	**1,330**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	MW15-17_20151016	10/16/2015	N	**0.234**	**0.0605 J**	**0.41**	**166**	**7.11**	**80,200**	**23,800**	**10,900**	**16,800**	**147**	**298**	**450**
	MW15-17SL	DUP01_20151016	10/16/2015	FD	**0.228**	**0.0474 J**	**0.42**	**165**	**7.20**	**80,400**	**24,000**	**11,100**	**17,400**	**147**	**299**	**456**
	MW15-17SL	MW15-17SL_20151208	12/8/2015	N	**0.268**	**0.0273 J**	**0.47**	**167**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	DUP-1_20151208	12/8/2015	FD	**0.251**	0.0196 UJ	**0.48**	**174**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	MW15-17SL_20160324	3/24/2016	N	**0.214**	**0.0146**	**0.48**	**138**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	MW15-17SL_20160622	6/22/2016	N	**0.190**	**0.0373**	**0.61**	**166**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	DUP02_20160622	6/22/2016	FD	**0.180**	**0.0317**	**0.63**	**167**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	MW15-17SL_20160921	9/21/2016	N	**0.170**	**0.0133**	5.0 UJ	**155**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	MW15-17SL_20161221	12/21/2016	N	**0.206**	**0.0113**	1.00 U	**160**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	MW15-17SL_20170316	3/16/2017	N	**0.224**	**0.0115**	**0.644**	**166**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	MW15-17SL_20170926	9/26/2017	N	**0.241**	**0.0131**	**0.823**	**177**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	MW15-17SL_20180315	3/15/2018	N	**0.216**	**0.0108**	**0.826**	**164**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-17SL	DUP02_20180315	3/15/2018	FD	**0.195**	**0.0101**	**0.792**	**168**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-19SL	MW15-19SL_20151208	12/8/2015	N	**0.0013 J**	0.0050 U	**2.95**	**155**	**17.9**	**44,400**	**15,700**	**12,100**	**64,400**	**115**	**176**	**444**
	MW15-19SL	MW15-19SL_20160324	3/24/2016	N	0.0047 U	0.0050 U	**5.4**	**82.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-19SL	MW15-19SL_20160622	6/22/2016	N	0.0047 U	0.0050 U	**4.03**	**97.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-19SL	MW15-19SL_20160921	9/21/2016	N	0.0047 U	0.0050 U	**4.4**	**94.2**	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 7
Groundwater Analytical Results for Non-PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
S_L (Continued)	MW15-19SL	MW15-19SL_20161222	12/22/2016	N	0.00500 U	0.00500 U	**5.06**	**104**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-19SL	MW15-19SL_20170316	3/16/2017	N	0.00500 U	0.00500 U	**4.60**	**102**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-19SL	MW15-19SL_20170926	9/26/2017	N	0.00500 U	0.00500 U	**4.83**	**102**	NR	NR	NR	NR	NR	NR	NR	NR
	MW15-19SL	MW15-19SL_20180314	3/14/2018	N	0.00500 U	0.00500 U	**4.49**	**101**	NR	NR	NR	NR	NR	NR	NR	NR
A	MWR-2A	MWR-2A_20140729	7/29/2014	N	**0.0053**	**0.001 J**	**0.19 J**	**13.4**	**2.66**	**17,800**	**4,730**	**4,330**	**35,200**	**110**	**63.8**	**150**
	MWR-2A	MWR-2A_20141022	10/22/2014	N	**0.0175**	**0.0010 J**	**0.25**	**15.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2A	MWR-2A_20150128	1/28/2015	N	**0.0444**	**0.0036 J**	**0.29**	**17.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2A	MWR-2A_20150417	4/17/2015	N	**0.0459**	**0.0098 J**	**0.38**	**17.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2A	MWR-2A_20160317	3/17/2016	N	**0.0358**	0.0050 U	**0.25**	**10.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2A	MWR-2A_20170320	3/20/2017	N	**0.0294**	0.00500 U	**0.438**	**17.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2A	DUP06_20170320	3/20/2017	FD	**0.0289**	0.00500 U	**0.401**	**17.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2A	MWR-2A_20170927	9/27/2017	N	**0.0384**	0.00500 U	**0.496**	**19.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2A	MWR-2A_20180321	3/21/2018	N	0.00500 U	0.00500 U	**0.287**	**11.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	MW6AA-20140725	7/25/2014	N	**0.500**	**0.122**	**0.66**	**37.9**	**5.41**	**18,200**	**5,360**	**8,030**	**34,600**	**106**	**67.4**	**199**
	MW-6AA	MW-6AA_20141021	10/21/2014	N	**0.520**	**0.0306**	**0.63**	**37.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	MW-6AA_20150121	1/21/2015	N	**0.224 J**	**0.0700**	**0.68**	**35.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	MW-6AA-032315	3/23/2015	N	**0.46**	**0.032 J**	**0.68**	**36.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	MW-6AA_20150416	4/16/2015	N	**0.465**	**0.0620 J**	**0.59 J**	**33.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	DUP04_20150416	4/16/2015	FD	**0.513**	**0.0078 J**	**1.1 J**	**33.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	MW6AA-20160323	3/23/2016	N	**0.490**	**0.0368**	**0.61**	**34.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	DUP6_20160323	3/23/2016	FD	**0.488**	**0.0545**	**0.60**	**34.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	MW-6AA_20170316	3/16/2017	N	**0.522**	**0.0265**	**0.735**	**38.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-6AA	MW-6AA_20180320	3/20/2018	N	**0.478**	**0.0282**	**0.667**	**39.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-7A	MWR-7A-032515	3/25/2015	N	**0.29**	**0.015 J**	**0.79**	**19.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-7A	MWR-7A_20160317	3/17/2016	N	**0.360**	**0.0387**	**1.00**	**19.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-7A	MWR-7A_20170321	3/21/2017	N	**0.323**	**0.0173**	**0.773**	**20.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-7A	MWR-7A_20180321	3/21/2018	N	**0.277**	**0.00790 J**	**0.768**	**20.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-7A	DUP06_20180321	3/21/2018	FD	**0.320**	**0.0225 J**	**0.758**	**20.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-12A	MW12A-20140724	7/24/2014	N	**0.0520**	**0.010**	**0.69**	**38.8**	**2.86**	**23,000**	**9,730**	**7,530**	**31,000**	**132**	**97.5**	**231**
	MW-12A	MW-12A_20141020	10/20/2014	N	**0.0545**	**0.0045 J**	**0.65**	**29.3**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-12A	DUP01_20141020	10/20/2014	FD	**0.0605**	**0.0042 J**	**0.64**	**27.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-12A	MW-12A_20150121	1/21/2015	N	**0.0630**	**0.0144**	**0.69**	**31.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-12A	MW-12A-032415	3/24/2015	N	**0.059 J**	0.060 U	**0.68**	**37.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-12A	MW-12A_20150416	4/16/2015	N	**0.0605**	**0.0072**	**0.57**	**35.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-12A	MW12A_20160317	3/17/2016	N	**0.0482**	**0.0053**	**0.60**	**83.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-12A	MW-12A_20170321	3/21/2017	N	**0.0542**	**0.00550**	**0.626**	**55.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-12A	MW-12A_20180321	3/21/2018	N	**0.0541**	**0.00900**	**0.633**	**53.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-13A	MWR-13A-20140724	7/24/2014	N	**0.0062**	**0.001 J**	**0.55**	**7.83**	**2.07**	**13,500**	**4,470**	**7,310**	**26,900**	**109**	**52.1**	**152**
	MW-13A	MWR-13A_20141020	10/20/2014	N	**0.0063**	0.0050 U	**0.44**	**18.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-13A	MWR-13A_20150121	1/21/2015	N	**0.0059**	**0.0029 J**	**0.54**	**10.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-13A	MW-13A-032615	3/26/2015	N	0.060 U	0.060 U	**0.54**	**8.70**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-13A	MWR-13A_20150416	4/16/2015	N	**0.0060**	**0.0011 J**	**0.50**	**8.38**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-13A	MWR-13A_20160317	3/17/2016	N	**0.0107 J**	0.0050 U	**0.79**	**12.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-13A	MWR-13A_20170321	3/21/2017	N	**0.00710**	0.00500 U	**0.496**	**13.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-13A	MWR-13A_20180321	3/21/2018	N	**0.00970**	0.00500 U	**0.487**	**11.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20140805	8/5/2014	N	**0.0011 J**	0.0050 U	**0.88**	**8.56**	**9.13**	**10,800**	**3,710**	**11,900**	**46,200**	**130**	**42.2**	**189**
	MW13-02A	MW13-02A_20141025	10/25/2014	N	**0.0146**	**0.0021 J**	**0.80**	**6.97**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20150125	1/25/2015	N	**0.0153**	**0.0082**	**1.1**	**5.80**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20150418	4/18/2015	N	**0.0111**	**0.0009 J**	**0.86**	**5.17**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20151209	12/9/2015	N	**0.0545**	**0.0235**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20160316	3/16/2016	N	**0.0315**	**0.0103**	**0.94**	**17.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20160622	6/22/2016	N	**0.0256 J**	**0.0022 J**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20160920	9/20/2016	N	**0.0262**	**0.0156**	**0.79**	**12.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20170320	3/20/2017	N	**0.0289**	0.00500 U	**0.934**	**12.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20170927	9/27/2017	N	**0.0306**	0.00500 U	**0.774**	**13.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	DUP04_20170927	9/27/2017	FD	**0.0310**	0.00500 U	**0.838**	**12.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02A	MW13-02A_20180321	3/21/2018	N	**0.0200**	0.00500 U	**0.890**	**10.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A-20140728	7/28/2014	N	**1.20**	**0.080**	**0.55**	**214**	**33.4**	**65,400**	**20,000**	**37,700**	**98,600**	**215**	**246**	**496**
	MW13-06A	MW13-06A_20141026	10/26/2014	N	**0.840**	**0.0359**	**1.2**	**195**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20150124	1/24/2015	N	**0.435 J**	**0.150**	**0.51**	**148**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	DUP05_20150124	1/24/2015	FD	**0.353 J**	**0.0115**	**0.55**	**151**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20150417	4/17/2015	N	**0.790**	**0.140**	**0.54**	**101**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20151209	12/9/2015	N	**0.915 J**	**0.0525 J**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20160323	3/23/2016	N	**0.785**	**0.0496**	**0.64**	**69.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20160622	6/22/2016	N	**0.592**	**0.0250**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20160921	9/21/2016	N	**0.803**	**0.164**	**0.62**	**72.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20170315	3/15/2017	N	**0.795**	**0.0109**	**0.822**	**60.5**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	DUP03_20170315	3/15/2017	FD	**0.731**	**0.0149**	**0.570**	**60.7**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20170927	9/27/2017	N	**0.735**	**0.0603**	**0.612**	**68.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-06A	MW13-06A_20180321	3/21/2018	N	**0.677**	**0.0447**	**0.551**	**61.5**	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 7
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The Dalles, Oregon

					Total Cyanide	Cyanide, WAD	Fluoride (F^-, Anion)	Sulfate	Chloride	Calcium	Magnesium	Potassium	Sodium	Alkalinity, Total (As CaCO3)	Hardness (AS CaCO3)	Total Dissolved Solids
				Method	E335.4	SM4500-CN-E	E300			SW6010C				SM2320B	SM2340B	SM2540C
				Comparison Level for Perched Zone	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				ARAR or ACLs for S and S_L Zones	-	0.77	9.7	3,020	-	-	-	-	-	-	-	-
				MCLs or SMCLs for A and B Aquifers	-	0.20	4.0	250	-	-	-	-	-	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
B	MWR-2B	MWR-2B_20140731	7/31/2014	N	**0.477 J**	**0.0550 J**	**0.72**	**85.4**	**5.43**	**23,400**	**4,690**	**9,490**	**48,000**	**96.7**	**77.6**	**277**
	MWR-2B	DUP05_20140731	7/30/2014	FD	**0.628 J**	**0.0398 J**	**0.72**	**87.3**	**5.55**	**23,400**	**4,700**	**9,190**	**46,700**	**95.1**	**79.0**	**284**
	MWR-2B	MWR-2B_20141022	10/22/2014	N	**0.629**	**0.0150**	**0.67**	**89.9**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2B	MWR-2B_20150128	1/28/2015	N	**0.265**	**0.0660**	**0.57**	**83.2**	NR	NR	NR	NR	NR	NR	NR	NR
	MWR-2B	MWR-2B_20150416	4/16/2015	N	**0.625**	**0.0279**	**0.53**	**83.0**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-27B	MW27B-20140729	7/29/2014	N	**0.0176**	**0.006 J**	**0.48**	**17.3**	**2.85**	**18,600**	**9,390**	**5,620**	**13,700**	**95.7**	**85.1**	**177**
	MW-27B	MW-27B_20141026	10/26/2014	N	**0.0189**	**0.0010 J**	**0.44**	**17.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-27B	MW-27B_20150124	1/24/2015	N	**0.0161**	**0.0012**	**0.42**	**16.4**	NR	NR	NR	NR	NR	NR	NR	NR
	MW-27B	MW27B_20150417	4/17/2015	N	0.0047 U	**0.0059**	**0.32**	**13.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02B	MW13-02B_20140805	8/5/2014	N	**0.0160**	**0.0058**	**0.43 J**	**266**	**20.2**	**238,000**	**122**	**414,000**	**260,000**	**1,290**	**594**	**2,050**
	MW13-02B	MW13-02B_20141025	10/25/2014	N	**0.0238**	**0.0025 J**	**0.38**	**32.1**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02B	MW13-02B_20150125	1/25/2015	N	**0.0382**	**0.0291**	**0.3 J**	**19.8**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02B	DUP07_20150125	1/25/2015	FD	**0.0367**	**0.0094**	**0.3 J**	**20.6**	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02B	MW13-02B_20150418	4/18/2015	N	**0.0259**	**0.0081**	**0.23**	0.200 U	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02B	MW13-02B_20151209	12/9/2015	N	**0.0347**	**0.0032 J**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02B	MW13-02B_20160316	3/16/2016	N	**0.0219**	**0.0054**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02B	MW13-02B_20160622	6/22/2016	N	**0.0185**	**0.0064**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	MW13-02B	MW13-02B_20160920	9/20/2016	N	**0.0251**	**0.0080**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Notes:

Bold indicates laboratory result detections

Grey shading indicates one or more regulatory criteria exceedance

Data reported to reporting limit

FD = field duplicate

mg/L = milligrams per liter

µg/L = micrograms per liter

N = normal sample

NR = not requested

S = split sample

WAD = weak acid dissociable

Total Alkalinity is reported as $CaCO_3$

ARAR = Applicable or Relevant and Appropriate Requirement

MCL or SMCL= United States Environmental Protection Agency (EPA) Safe Drinking Water Act Maximum Contaminant Level or secondary MCL

Qualifiers

B = blank contamination

J = estimated result

UJ = not detected at or above the stated level, which is an approximate value

U = not detected above indicated reporting limit

TABLE 8
Groundwater Analytical Results for PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
				Method	SW8270D-SIM						
				MCLs for All Monitoring Zones	-	0.2	--	--	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Perched	EAST DWT	EAST DWT_20141025	10/25/2014	N	**0.0045 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	EAST DWT	EAST DWT_20150120	1/20/2015	N	**0.0064 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	EAST DWT	EAST DWT_20150418	4/18/2015	N	**0.0036 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	WEST DWT	WEST DWT_20141025	10/25/2014	N	**0.042**	**0.021**	**0.029**	**0.0052 J**	**0.17**	**0.0062 J**	**0.012 J**
	WEST DWT	WEST DWT_20150120	1/20/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	WEST DWT	DUP02_20150120	1/20/2015	FD	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	WEST DWT	WEST DWT_20150418	4/18/2015	N	**0.024**	**0.0077 J**	**0.011 J**	**0.0033 J**	**0.085**	0.019 U	**0.0037 J**
	PZ-01	PZ-01_20150121	1/21/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	PZ-02	PZ-02_20150121	1/21/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	PZ-02	PZ-02_20150416	4/16/2015	N	**0.0037 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	PZ-03	PZ-3-20140725	7/25/2014	N	**0.0050 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	PZ-03	PZ-03_20141026	10/26/2014	N	**0.0055 J**	0.020 U	**0.0042 J**	0.020 U	**0.0051 J**	0.020 U	0.020 U
	PZ-03	PZ-03_20150121	1/21/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	PZ-03	PZ-03_20150416	4/16/2015	N	**0.0040 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	P-1	P-1_20140801	8/1/2014	N	**0.014 B**	**0.018 J**	**0.025**	**0.0093 J**	**0.017 J**	**0.0029 J**	**0.017 J**
	P-1	P-1_20141025	10/25/2014	N	**0.0088 J**	**0.0076 J**	**0.012 J**	**0.0030 J**	**0.0060 J**	0.020 U	**0.0070 J**
	P-1	P-1_20150120	1/20/2015	N	**0.011 B**	**0.013 J**	**0.015 J**	**0.0052 J**	**0.017 J**	0.019 U	**0.013 J**
	P-1	P-1_20150418	4/18/2015	N	**0.0068 B**	**0.0070 J**	**0.0091 J**	**0.0037 J**	**0.0067 J**	0.019 U	**0.0056 J**
	P-2	P-2_20150120	1/20/2015	N	**0.0068 B**	**0.0052 J**	**0.0051 J**	0.020 U	**0.0042 J**	0.020 U	**0.0051 J**
	P-2	P-2_20150418	4/18/2015	N	**0.0046 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	P-3	P-3_20141025	10/25/2014	N	**0.0051 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	P-3	P-3_20150120	1/20/2015	N	**0.0072 B**	**0.0065 J**	**0.0076 J**	0.020 U	**0.0050 J**	0.020 U	**0.0055 J**
	P-3	P-3_20150418	4/18/2015	N	**0.0032 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	P-5	P-5_20150120	1/20/2015	N	**0.0042 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	P-6	P-6_20150120	1/20/2015	N	**0.0069 B**	0.020 U	0.020 U	0.020 U	**0.0063 J**	0.020 U	**0.0047 J**
	P-6	P-6_20150418	4/18/2015	N	**0.0075 B**	**0.0055 J**	**0.0080 J**	**0.0047 J**	**0.0067 J**	**0.0063 J**	**0.0089 J**
	MW-5S	MW-5S_20140731	7/31/2014	N	**0.0074 J**	0.020 U	**0.0080 J**	**0.0037 J**	**0.0055 J**	0.020 U	**0.0043 J**
	MW-5S	MW-5S_20141024	10/24/2014	N	**0.0033 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-5S	MW-5S_20150123	1/23/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-5S	MW-5S_20150415	4/15/2015	N	**0.0059 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-01P	MW13-01P_20140729B	8/1/2014	N	**0.0053 B**	0.020 U	0.020 U	0.020 U	**0.0038 J**	0.020 U	0.020 U
	MW13-01P	MW13-01P_20141025	10/25/2014	N	**0.0036 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-01P	MW13-01P_20150125	1/25/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-01P	MW13-01P_20150418	4/18/2015	N	**0.0053 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-01P	DUP07_20150418	4/18/2015	FD	**0.0057 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0027 J**
	MW13-02P	MW13-02P_20140801	8/1/2014	N	**0.0051 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02P	DUP06_20140801	8/1/2014	FD	**0.0050 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02P	MW13-02P_20141025	10/25/2014	N	**0.0050 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02P	MW13-02P_20150125	1/25/2015	N	**0.0064 J**	0.020 U	0.020 U	0.020 U	**0.0054 J**	0.020 U	0.020 U
	MW13-02P	MW13-02P_20150418	4/18/2015	N	**0.0047 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-02P	DUP06_20150418	4/18/2015	FD	**0.0030 B**	**0.030**	**0.015 J**	**0.0078 J**	0.020 U	0.020 U	0.020 U
	MW13-03P	MW13-03P_20140724	7/24/2014	N	**0.0045 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-03P	MW13-03P_20141020	10/20/2014	N	**0.0031 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-03P	MW13-03P_20150121	1/21/2015	N	**0.0040 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-03P	DUP03_20150121	1/21/2015	FD	**0.0033 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-03P	MW13-03P_20150416	4/16/2015	N	**0.0034 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-04P	MW13-04P-20140725	7/25/2014	N	**0.0047 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-04P	MW13-04P_20141020	10/20/2014	N	**0.0039 B**	0.020 U	0.020 U	0.020 U	**0.0035 J**	0.020 U	0.020 U

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					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
				Method	SW8270D-SIM						
				MCLs for All Monitoring Zones	-	0.2	--	--	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Perched (continued)	MW13-04P	MW13-04P_20150121	1/21/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-04P	MW13-04P_20150416	4/16/2015	N	**0.0043 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-05P	MW13-05P_20140729	7/29/2014	N	**0.0043 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-05P	MW13-05P_20141025	10/25/2014	N	**0.0050 J**	0.020 U	0.020 U	0.020 U	**0.0038 J**	0.020 U	0.020 U
	MW13-05P	MW13-05P_20150119	1/19/2015	N	**0.0037 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-05P	DUP01_20150119	1/19/2015	FD	**0.0038 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-05P	MW13-05P_20150414	4/14/2015	N	**0.0063 J**	0.020 U	0.020 U	0.020 U	**0.0047 J**	0.020 U	0.020 U
	MW13-06P	MW-13-06P_20140728	7/28/2014	N	**0.0050 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06P	MW13-06P_20141026	10/26/2014	N	**0.0072 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06P	MW13-06P_20150124	1/24/2015	N	0.025 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06P	MW13-06P_20150417	4/17/2015	N	**0.0095 B**	0.020 U	**0.0043 J**	0.020 U	**0.0067 J**	0.020 U	0.020 U
	MW13-07P	MW13-07P_20140723	7/23/2014	N	**0.071**	**0.16**	**0.33**	**0.085**	**0.12**	**0.016 J**	**0.10**
	MW13-07P	MW13-07P_20141022	10/22/2014	N	**0.075**	**0.086**	**0.17**	**0.055**	**0.081**	**0.012 J**	**0.051**
	MW13-07P	DUP03_20141022	10/22/2014	FD	**0.086**	**0.081**	**0.17**	**0.061**	**0.090**	**0.012 J**	**0.052**
	MW13-07P	MW13-07P_20150128	1/28/2015	N	**0.032**	**0.037**	**0.061**	**0.022**	**0.055**	**0.0036 J**	**0.023**
	MW13-07P	MW13-07P_20150419	4/19/2015	N	**0.16**	**0.24**	**0.38**	**0.13**	**0.24**	**0.036**	**0.20**
	MW13-08P	MW13-08P_20140730	7/30/2014	N	**0.0047 J**	0.020 U	**0.0045 J**	0.020 U	0.020 U	0.020 U	**0.0037 J**
	MW13-08P	MW13-08P_20141025	10/25/2014	N	**0.0032 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-08P	MW13-08P_20150125	1/25/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-08P	MW13-08P_20150418	4/18/2015	N	**0.0072 B**	0.020 U	0.020 U	0.020 U	**0.0044 J**	0.020 U	0.020 U
	MW13-09P	MW13-09P_20140725C	8/1/2014	N	**0.034**	**0.034**	**0.050**	**0.016 J**	**0.052**	**0.0045 J**	**0.031**
	MW13-09P	MW13-09P_20141010A	10/14/2014	N	**0.0061 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	**0.0028 J**
	MW13-09P	MW13-09P_20150124	1/24/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-09P	MW13-09P_20150419	4/19/2015	N	**0.0045 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-10P	MW13-10P_20140723	7/23/2014	N	**0.0034 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-10P	MW13-10P_20141022	10/22/2014	N	**0.0027 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-10P	MW13-10P_20150124	1/24/2015	N	0.034 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-10P	MW13-10P_20150417	4/17/2015	N	**0.0037 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-11P	MW13-11P_20140725E	8/1/2014	N	**0.015 J**	**0.012 J**	**0.019 J**	**0.0054 J**	**0.024 J**	0.020 UJ	**0.011 J**
	MW13-11P	MW13-11P_20141010A	10/14/2014	N	**0.0090 B**	**0.0080 J**	**0.0050 J**	0.019 U	**0.0059 J**	0.019 U	0.019 U
	MW13-11P	MW13-11P_20150124	1/24/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-11P	MW13-11P_20150419	4/19/2015	N	**0.0069 B**	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U
	MW13-12P	MW13-12P_20140723	7/23/2014	N	**0.0083 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-12P	MW13-12P_20141022	10/22/2014	N	**0.0085 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-12P	MW13-12P_20150124	1/24/2015	N	**0.013 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-12P	MW13-12P_20150419	4/19/2015	N	**0.0070 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-13P	MW13-13P_20140725C	8/1/2014	N	**0.0071 B**	0.020 U	**0.0050 J**	0.020 U	**0.0039 J**	0.020 U	**0.0032 J**
	MW13-13P	MW13-13P_20141025	10/25/2014	N	**0.014 J**	**0.014 J**	**0.020**	**0.0072 J**	**0.015 J**	**0.0033 J**	**0.014 J**
	MW13-13P	MW13-13P_20150123	1/23/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-13P	MW13-13P_20150417	4/17/2015	N	**0.0098 B**	**0.0076 J**	**0.0089 J**	0.020 U	**0.0068 J**	0.020 U	**0.0049 J**
	MW13-16P	MW13-16P_20140723	7/23/2014	N	**0.0044 B**	0.020 U	0.020 U	0.020 U	0.020 U	**0.0031 B**	**0.0074 B**
	MW13-16P	MW13-16P_20141021	10/21/2014	N	**0.0032 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-16P	MW13-16P_20150124	1/24/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-16P	MW13-16P_20150417	4/17/2015	N	**0.011 B**	**0.0099 J**	**0.015 J**	**0.0057 J**	**0.011 J**	0.019 U	**0.0067 J**
	MW15-18P	MW15-18_20151016	10/16/2015	N	**0.0070 B**	0.020 U	**0.0044 J**	0.020 U	0.020 U	**0.0042 J**	**0.0037 J**
	MW15-18P	MW15-18P_20151209	12/9/2015	N	**0.0067 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 UJ

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					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
				Method	SW8270D-SIM						
				MCLs for All Monitoring Zones	-	0.2	--	--	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Perched (continued)	MW15-18P	MW15-18P_20160323	3/23/2016	N	0.0060 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-18P	DUP1_20160323	3/23/2016	FD	0.0056 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW15-18P	MW15-18P_20160623	6/23/2016	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 U
	MW15-18P	MW15-18P_20160920	9/20/2016	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-18P	MW15-18P_20161221	12/21/2016	N	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
	MW15-20P	MW15-20_20151016	10/16/2015	N	**0.0026 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-20P	MW15-20P_20151209	12/9/2015	N	**0.0097 J**	**0.0059 J**	**0.0089 J**	**0.0059 J**	**0.0071 J**	**0.0050 J**	**0.0081 J**
	MW15-20P	MW15-20P_20160323	3/23/2016	N	0.0049 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-20P	MW15-20P_20160623	6/23/2016	N	0.020 U	0.020 U	0.020 U	0.020 U	**0.0068 J**	0.020 UJ	0.020 U
	MW15-20P	MW15-20P_20160920	9/20/2016	N	**0.0038 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-20P	DUP01_20160920	9/20/2016	FD	0.011 J	0.0053 J	0.0064 J	0.020 U	0.020 J	0.020 U	0.020 U
	MW15-20P	MW15-20P_20161221	12/21/2016	N	0.0388 U	0.0388 U	0.0388 U	0.0388 U	0.0388 U	0.0388 U	0.0388 U
S	MW-2S	MW-2S_20140729	7/29/2014	N	**0.0039 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-2S	MW-2S_20141022	10/22/2014	N	**0.0043 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-2S	MW-2S_20150128	1/28/2015	N	**0.0030 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-2S	MW-2S_20150416	4/16/2015	N	**0.0038 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-3S	MW-3S_20140730	7/30/2014	N	**0.018 J**	**0.020 J**	**0.037**	**0.013 J**	**0.025**	**0.0027 J**	**0.019 J**
	MW-3S	MW-3S_20141024	10/24/2014	N	**0.0099 J**	**0.0086 J**	**0.018 J**	**0.0052 J**	**0.015 J**	0.019 U	**0.011 J**
	MW-3S	MW-3S_20150123	1/23/2015	N	**0.0030 B**	0.020 U	**0.0051 J**	0.020 U	**0.0042 J**	0.020 U	**0.0035 J**
	MW-3S	MW3S_20150419	4/19/2015	N	**0.011 B**	**0.0089 J**	**0.017 J**	**0.0077 J**	**0.013 J**	0.019 U	**0.0071 J**
	MWR-4S	MWR-4S_20140801	8/1/2014	N	**0.0039 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0040 J**
	MWR-4S	MWR-4S_20141024	10/24/2014	N	**0.014 J**	**0.017 J**	**0.027**	**0.010 J**	**0.015 J**	**0.0039 J**	**0.017 J**
	MWR-4S	MWR-4S_20150123	1/23/2015	N	**0.0037 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-4S	MWR-4S_20150415	4/15/2015	N	**0.0053 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-15S	MWR-15S_20140729	7/29/2014	N	**0.0042 JB**	0.020 U	0.020 U	0.020 U	0.020 U	**0.0038 JB**	**0.0047 JB**
	MWR-15S	DUP03_20140729	7/29/2014	FD	**0.0032 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-15S	MWR-15S_20141026	10/26/2014	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-15S	MWR-15S_20150124	1/24/2015	N	**0.0043 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-15S	MWR-15S_20150419	4/19/2015	N	**0.0035 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-17S	MW-17S_20140731	7/31/2014	N	**0.0054 B**	0.020 U	**0.0055 J**	0.020 U	**0.0043 J**	0.020 U	**0.0031 J**
	MW-17S	DUP01B_20140731	7/31/2014	FD	**0.0044 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-17S	MW-17S_20141024	10/24/2014	N	**0.0030 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-17S	MW-17S_20150123	1/23/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-17S	MW-17S_20150415	4/15/2015	N	**0.0058 B**	0.019 U	**0.0066 J**	**0.0031 J**	**0.0052 J**	0.019 U	**0.0030 J**
	MW-22S	MW-22S_20140731	7/31/2014	N	**0.0045 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0027 J**
	MW-22S	MW-22S_20141024	10/24/2014	N	**0.0035 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-22S	MW-22S_20150123	1/23/2015	N	**0.0069 B**	**0.0059 J**	**0.0072 J**	0.019 U	**0.0054 J**	0.019 U	**0.0056 J**
	MW-22S	MW-22S_20150415	4/15/2015	N	**0.0032 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-23S	MW-23S_20140731	7/31/2014	N	**0.0033 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-23S	MW-23S_20141024	10/24/2014	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-23S	MW-23S_20150123	1/23/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-23S	MW-23S_20150415	4/15/2015	N	**0.0040 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-26S	MW-26S_20140729	7/29/2014	N	**0.0049 B**	**0.0049 B**	**0.0043 B**	0.020 U	0.020 U	0.020 U	0.020 U
	MW-26S	MW-26S_20141027	10/27/2014	N	**0.0042 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0028 J**
	MW-26S	MW-26S_20150128	1/28/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-26S	MW-26S_20150416	4/16/2015	N	**0.0028 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-27S	MW27S-20140728	7/28/2014	N	**0.011 B**	**0.012 J**	**0.015 J**	**0.0052 J**	**0.0098 J**	0.019 U	**0.0083 J**
	MWR-27S	MWR-27S_20141026	10/26/2014	N	**0.0045 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U

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The Dalles, Oregon

					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
				Method	SW8270D-SIM						
				MCLs for All Monitoring Zones	-	0.2	--	--	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
S (continued)	MWR-27S	MWR-27S_20150124	1/24/2015	N	**0.010 B**	**0.0050 J**	**0.0067 J**	**0.0030 J**	**0.0044 J**	0.020 U	**0.0050 J**
	MWR-27S	DUP06_20150124	1/24/2015	FD	**0.0047 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-27S	MWR-027S_20150417	4/17/2015	N	**0.0086 B**	0.019 U	**0.0056 J**	0.019 U	**0.0049 J**	0.019 U	**0.0031 J**
	MW-29S	MW-29S_20140804	8/4/2014	N	**0.0068 B**	**0.0045 J**	**0.0085 J**	0.020 U	**0.0041 J**	0.020 U	**0.0051 B**
	MW-29S	DUP07_20140804	8/4/2014	FD	**0.0067 B**	0.020 U	**0.0062 J**	0.020 U	0.020 U	0.020 U	**0.0039 B**
	MW-29S	MW-29S_20141023	10/23/2014	N	**0.0077 J**	**0.0063 J**	**0.010 J**	**0.0031 J**	**0.0052 J**	0.020 U	**0.0059 J**
	MW-29S	MW-29S_20150122	1/22/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-29S	DUP04_20150122	1/22/2015	FD	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-29S	MW-29S_20150415	4/15/2015	N	**0.0043 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-29S	MW29S_20160324	3/24/2016	N	**0.018 J**	**0.017 J**	**0.034**	**0.012 J**	**0.023**	**0.0033 J**	**0.015 J**
	MWR-29S	MWR29S_20160324	3/24/2016	N	0.0039 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-35S	MW-35S_20140731	7/31/2014	N	**0.017 J**	0.020 U	**0.0049 J**	0.020 U	**0.039**	0.020 U	0.020 U
	MW-35S	MW-35S_20141024	10/24/2014	N	**0.011 J**	0.020 U	0.020 U	0.020 U	**0.010 J**	0.020 U	0.020 U
	MW-35S	MW-35S_20150123	1/23/2015	N	**0.016 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-35S	MW-35S_20150415	4/15/2015	N	**0.014 J**	0.022 U	**0.0094 J**	**0.0035 J**	**0.038**	0.022 U	0.022 U
	MW-36S	MW-36S_20140731	7/31/2014	N	**0.0031 B**	0.020 U	0.020 U	0.020 U	0.020 U	**0.0058 J**	**0.0050 J**
	MW-36S	MW-36S_20141024	10/24/2014	N	**0.0028 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-36S	MW-36S_20150123	1/23/2015	N	**0.0033 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-36S	MW-36S_20150415	4/15/2015	N	**0.0027 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-37S	MW-37S_20140731	7/31/2014	N	**0.0033 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-37S	MW-37S_20141024	10/24/2014	N	**0.012 J**	**0.0098 J**	**0.020**	**0.0065 J**	**0.014 J**	**0.0026 J**	**0.013 J**
	MW-37S	DUP05_20141024	10/24/2014	FD	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-37S	MW-37S_20150123	1/23/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-37S	MW-37S_20150415	4/15/2015	N	**0.0036 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-37S	DUP02_20150415	4/15/2015	FD	**0.0027 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-38S	MW-38S_20140729	7/29/2014	N	**0.0044 B**	0.020 U	**0.0043 B**	**0.0035 B**	**0.0034 J**	**0.0043 B**	**0.0053 B**
	MW-38S	MW-38S_20141021	10/21/2014	N	**0.0026 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-38S	DUP02_20141021	10/21/2014	FD	**0.0026 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-38S	MW-38S_20150121	1/21/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-38S	MW-38S_20150416	4/16/2015	N	**0.0029 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-39S	MW39S-20140724	7/24/2014	N	**0.0059 B**	**0.0052 J**	**0.0070 J**	0.020 U	**0.0043 J**	0.020 U	**0.0049 B**
	MW-39S	MW-39S_20141020	10/20/2014	N	**0.0051 B**	0.020 U	**0.0049 J**	0.020 U	**0.0044 J**	0.020 U	**0.0037 J**
	MW-39S	MW-39S_20150121	1/21/2015	N	**0.0039 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-39S	MW-39S_20150416	4/16/2015	N	**0.0029 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-39S	DUP03_20150416	4/16/2015	FD	**0.0026 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-40S	MW40S-20140724	7/24/2014	N	**0.0040 B**	0.020 U	0.020 U	0.020 U	0.020 U	**0.0026 B**	**0.0038 B**
	MW-40S	MW-40S_20141020	10/20/2014	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-40S	MW-40S_20150121	1/21/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-40S	MW-40S_20150416	4/16/2015	N	**0.0029 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-41S	MW41S-20170725	7/25/2014	N	**0.0043 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-41S	MW-41S_20141020	10/20/2014	N	**0.0031 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-41S	MW-41S_20150121	1/21/2015	N	**0.0034 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-41S	MW41-S_20150416	4/16/2015	N	**0.0034 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-42S	MW42S-20140725	7/25/2014	N	**0.0031 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-42S	MW-42S_20141025	10/25/2014	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-42S	MW-42S_20150125	1/25/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-42S	MW-42S_20150418	4/18/2015	N	**0.0026 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U

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					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
				Method	SW8270D-SIM						
				MCLs for All Monitoring Zones	-	0.2	--	--	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
S (continued)	MW13-01S	MW13-01S_20140808	8/8/2014	N	**0.0053 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-01S	MW13-01S_20141025	10/25/2014	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-01S	MW13-01S_20150125	1/25/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-01S	MW13-01S_20150414	4/14/2015	N	**0.0075 J**	0.021 U	0.021 U	0.021 U	**0.0048 J**	0.021 U	0.021 U
	MW13-02S	MW13-02S_20140801	8/1/2014	N	**0.0051 B**	**0.0051 J**	**0.013 J**	**0.0053 J**	**0.0057 J**	0.020 U	**0.016 J**
	MW13-02S	MW13-02S_20141025	10/25/2014	N	**0.0031 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02S	DUP06_20141025	10/25/2014	FD	**0.0044 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02S	MW13-02S_20150125	1/25/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02S	MW13-02S_20150418	4/18/2015	N	**0.0033 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06S	MW13-06S_20140723	7/23/2014	N	**0.0070 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06S	MW13-06S_20141026	10/26/2014	N	**0.0062 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0040 J**
	MW13-06S	DUP07_20141026	10/26/2014	FD	**0.0056 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-06S	MW13-06S_20150124	1/24/2015	N	**0.0042 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06S	MW13-06S_20150417	4/17/2015	N	**0.0054 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-08S	MW13-08S_20140730	7/30/2014	N	**0.0054 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-08S	MW13-08S_20141025	10/25/2014	N	**0.0065 J**	0.020 U	**0.0050 J**	0.020 U	**0.0042 J**	0.020 U	**0.0039 J**
	MW13-08S	MW13-08S_20150125	1/25/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-08S	MW13-08S_20150418	4/18/2015	N	**0.0073 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-11S	MW13-11S_20140723	7/23/2014	N	**0.0038 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-11S	MW13-11S_20141022	10/22/2014	N	**0.0027 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-11S	MW13-11S_20150124	1/24/2015	N	**0.0034 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-11S	MW13-11S_20150417	4/17/2015	N	**0.0091 B**	**0.0067 J**	**0.011 J**	**0.0037 J**	**0.0064 J**	0.020 U	**0.0053 J**
	MW13-13S	MW13-13S_20140723	7/23/2014	N	**0.0066 B**	**0.0049 J**	**0.0070 J**	0.020 U	**0.0036 J**	0.020 U	**0.0079 B**
	MW13-13S	MW13-13S_20141025	10/25/2014	N	**0.0033 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-13S	MW13-13S_20150123	1/23/2015	N	**0.0096 B**	**0.0067 J**	**0.0083 J**	**0.0050 J**	**0.0079 J**	0.019 U	**0.0058 J**
	MW13-13S	MW13-13S_20150417	4/17/2015	N	**0.0058 B**	0.020 U	**0.0055 J**	0.020 U	**0.0039 J**	0.020 U	0.020 U
	MW13-16S	MW13-16S-20140728	7/28/2014	N	**0.0038 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-16S	DUP02-20140728	7/28/2014	FD	**0.0046 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-16S	MW13-16S_20141022	10/22/2014	N	**0.023**	**0.028**	**0.046**	**0.014 J**	**0.034**	**0.0091 J**	**0.029**
	MW13-16S	MW13-16S_20150124	1/24/2015	N	**0.0084 B**	**0.0061 J**	**0.0080 J**	**0.0043 J**	**0.0075 J**	0.020 U	**0.0063 J**
	MW13-16S	MW13-16S_20150417	4/17/2015	N	**0.0066 B**	**0.0048 J**	**0.0072 J**	0.020 U	**0.0052 J**	0.020 U	**0.0045 J**
	MW13-16S	DUP05_20150417	4/17/2015	FD	**0.0070 B**	0.020 U	**0.0059 J**	0.020 U	**0.0036 J**	0.020 U	**0.0040 J**
S_L	MW-1	MW-1_20140805	8/5/2014	N	**0.0031 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-1	MW-1_20141023	10/23/2014	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-1	DUP04_20141023	10/23/2014	FD	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-1	MW-1_20150122	1/22/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-1	MW-1_20150415	4/15/2015	N	**0.0034 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-2	MW-2_20140805	8/5/2014	N	**0.0039 B**	0.020 U	0.020 U	0.020 U	0.020 U	**0.0025 B**	**0.0031 B**
	MW-2	MW-2_20141023	10/23/2014	N	**0.0029 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-2	MW-2_20150122	1/22/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-2	MW-2_20150415	4/15/2015	N	**0.0035 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-3	MW-3_20140804	8/4/2014	N	**0.0051 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-3	MW-3_20141023	10/23/2014	N	**0.0032 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-3	MW-3_20150122	1/22/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0053 J**	**0.0063 J**
	MW-3	MW-3_20150415	4/15/2015	N	**0.0044 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-4U	MW-4U_20140805	8/5/2014	N	**0.0043 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-4U	MW-4U_20141023	10/23/2014	N	**0.0030 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U

TABLE 8
Groundwater Analytical Results for PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
				Method	SW8270D-SIM						
				MCLs for All Monitoring Zones	-	0.2	--	--	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
S_L (continued)	MW-4U	MW-4U_20150122	1/22/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-4U	MW-4U_20150414	4/14/2015	N	**0.0041 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-4L	MW-4L_20140805	8/5/2014	N	**0.0056 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0035 B**
	MW-4L	MW-4L_20141023	10/23/2014	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-4L	MW-4L_20150122	1/22/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-4L	MW-4L_20150414	4/14/2015	N	**0.0050 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-4L	DUP01_20150414	4/14/2015	FD	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-5	MW-5_20140805	8/5/2014	N	**0.0030 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-5	MW-5_20141023	10/23/2014	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-5	MW-5_20150122	1/22/2015	N	**0.0029 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-5	MW-5_20150415	4/15/2015	N	**0.0047 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-14SL	MW13-14SL_20140730	7/30/2014	N	**0.0082 J**	0.020 U	**0.0080 J**	**0.0070 J**	0.020 U	0.020 U	**0.0055 J**
	MW13-14SL	MW13-14SL_20141027	10/27/2014	N	**0.0096 J**	0.020 U	**0.0055 J**	0.020 U	0.020 U	0.020 U	**0.0040 J**
	MW13-14SL	MW13-14SL_20150122	1/22/2015	N	**0.017 J**	**0.0097 J**	**0.026**	**0.0095 J**	0.020 UJ	**0.0083 J**	**0.033**
	MW13-14SL	MW13-14SL_20150419	4/19/2015	N	**0.0095 B**	0.020 U	**0.0043 J**	0.020 U	0.020 U	0.020 U	**0.0038 J**
	MW13-15SL	MW13-15SL_20140730	7/30/2014	N	**0.0043 J**	**0.0050 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-15SL	DUP04_20140730	7/30/2014	FD	**0.0051 J**	**0.0055 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-15SL	MW13-15SL_20141027	10/27/2014	N	**0.0057 J**	**0.0054 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-15SL	MW13-15SL_20150122	1/22/2015	N	**0.0055 B**	**0.0084 J**	0.020 U	0.020 U	**0.0053 J**	0.020 U	**0.0030 J**
	MW13-15SL	MW13-15SL_20150419	4/19/2015	N	**0.0048 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW15-17SL	MW15-17_20151016	10/16/2015	N	**0.0033 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-17SL	DUP01_20151016	10/16/2015	FD	**0.0031 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-17SL	MW15-17SL_20151208	12/8/2015	N	**0.0034 J**	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 UJ
	MW15-17SL	DUP-1_20151208	12/8/2015	FD	**0.0032 J**	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 UJ
	MW15-17SL	MW15-17SL_20160324	3/24/2016	N	0.0040 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-17SL	MW15-17SL_20160622	6/22/2016	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 U
	MW15-17SL	DUP02_20160622	6/22/2016	FD	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 U
	MW15-17SL	MW15-17SL_20160921	9/21/2016	N	**0.0053 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW15-17SL	MW15-17SL_20161221	12/21/2016	N	0.0396 U	0.0396 U	0.0396 U	0.0396 U	0.0396 U	0.0396 U	**0.0225 J**
	MW15-19SL	MW15-19SL_20151208	12/8/2015	N	**0.0056 J**	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 UJ
	MW15-19SL	MW15-19SL_20160324	3/24/2016	N	0.010 U	0.020 U	0.020 U	0.020 U	**0.023**	0.020 U	0.020 U
	MW15-19SL	MW15-19SL_20160622	6/22/2016	N	0.020 U	0.020 U	0.020 U	0.020 U	**0.014 J**	0.020 UJ	0.020 U
	MW15-19SL	MW15-19SL_20160921	9/21/2016	N	**0.0064 J**	**0.0060 J**	0.020 U	0.020 U	**0.0040 J**	0.020 U	0.020 U
	MW15-19SL	MW15-19SL_20161222	12/22/2016	N	0.0388 U	0.0388 U	0.0388 U	0.0388 U	0.0388 U	0.0388 U	0.0388 U
A	MWR-2A	MWR-2A_20140729	7/29/2014	N	**0.0067 B**	**0.0063 B**	**0.0075 B**	**0.0034 B**	**0.0055 J**	**0.0069 B**	**0.0085 B**
	MWR-2A	MWR-2A_20141022	10/22/2014	N	**0.0060 J**	**0.0057 J**	**0.0097 J**	**0.0036 J**	**0.0067 J**	0.020 U	**0.0052 J**
	MWR-2A	MWR-2A_20150128	1/28/2015	N	**0.0076 J**	**0.0086 J**	**0.015 J**	**0.0050 J**	**0.013 J**	0.020 U	**0.0094 J**
	MWR-2A	MWR-2A_20150417	4/17/2015	N	**0.0043 B**	0.020 U	**0.0062 J**	0.020 U	0.020 U	0.020 U	**0.0029 J**
	MW-6AA	MW6AA-20140725	7/25/2014	N	**0.0049 B**	**0.0053 J**	**0.0050 J**	**0.0045 J**	0.019 U	**0.0075 B**	**0.012 B**
	MW-6AA	MW-6AA_20141021	10/21/2014	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-6AA	MW-6AA_20150121	1/21/2015	N	**0.0033 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-6AA	MW-6AA_20150416	4/16/2015	N	**0.0031 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-6AA	DUP04_20150416	4/16/2015	FD	**0.0029 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MW-12A	MW12A-20140724	7/24/2014	N	**0.0042 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.0026 B**
	MW-12A	MW-12A_20141020	10/20/2014	N	**0.0037 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-12A	DUP01_20141020	10/20/2014	FD	**0.0049 B**	0.020 U	**0.0053 J**	0.020 U	**0.0040 J**	0.020 U	0.020 U
	MW-12A	MW-12A_20150121	1/21/2015	N	**0.0047 B**	0.020 U	**0.0050 J**	0.020 U	**0.0037 J**	0.020 U	**0.0027 J**
	MW-12A	MW-12A_20150416	4/16/2015	N	**0.0035 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U

TABLE 8
Groundwater Analytical Results for PAHs
Former Martin Marietta Reduction Facility
Lockheed Martin Corporation
The Dalles, Oregon

					Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
				Method	SW8270D-SIM						
				MCLs for All Monitoring Zones	-	0.2	--	--	-	-	-
Monitoring Zone	**Monitoring Well**	**Sample ID**	**Sample Date**	**Sample Type**	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
A	MW-13A	MWR-13A-20140724	7/24/2014	N	**0.0036 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
(continued)	MW-13A	MWR-13A_20141020	10/20/2014	N	**0.0041 B**	0.020 U	0.020 U	**0.0032 J**	0.020 U	**0.0045 J**	**0.0072 J**
	MW-13A	MWR-13A_20150121	1/21/2015	N	**0.0027 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-13A	MWR-13A_20150416	4/16/2015	N	**0.0089 B**	0.020 U	0.020 U	**0.0031 J**	**0.0062 J**	0.020 U	0.020 U
	MW13-02A	MW13-02A_20140805	8/5/2014	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02A	MW13-02A_20141025	10/25/2014	N	**0.0030 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02A	MW13-02A_20150125	1/25/2015	N	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02A	MW13-02A_20150418	4/18/2015	N	0.019 U	**0.026**	**0.011 J**	0.019 U	0.019 U	0.019 U	0.019 U
	MW13-06A	MW13-06A-20140728	7/28/2014	N	**0.0036 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06A	MW13-06A_20141026	10/26/2014	N	**0.0042 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06A	MW13-06A_20150124	1/24/2015	N	**0.0061 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06A	DUP05_20150124	1/24/2015	FD	**0.0050 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-06A	MW13-06A_20150417	4/17/2015	N	**0.0051 B**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
B	MWR-2B	MWR-2B_20140731	7/31/2014	N	**0.0042 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-2B	DUP05_20140731	7/30/2014	FD	**0.0047 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-2B	MWR-2B_20141022	10/22/2014	N	**0.0042 J**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
	MWR-2B	MWR-2B_20150128	1/28/2015	N	**0.0050 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MWR-2B	MWR-2B_20150416	4/16/2015	N	**0.0049 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW-27B	MW27B-20140729	7/29/2014	N	**0.058**	**0.079**	**0.10**	**0.036**	**0.064**	**0.016 B**	**0.075**
	MW-27B	MW-27B_20141026	10/26/2014	N	**0.026**	**0.033**	**0.040**	**0.014 J**	**0.032**	**0.0068 J**	**0.028**
	MW-27B	MW-27B_20150124	1/24/2015	N	**0.0060 B**	0.019 U	**0.0054 J**	0.019 U	**0.0054 J**	0.019 U	**0.0043 J**
	MW-27B	MW27B_20150417	4/17/2015	N	**0.015 B**	**0.013 J**	**0.019 J**	**0.0067 J**	**0.016 J**	**0.0037 J**	**0.011 J**
	MW13-02B	MW13-02B_20140805	8/5/2014	N	**0.0031 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02B	MW13-02B_20141025	10/25/2014	N	**0.0026 J**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02B	MW13-02B_20150125	1/25/2015	N	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	**0.013 J**
	MW13-02B	DUP07_20150125	1/25/2015	FD	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
	MW13-02B	MW13-02B_20150418	4/18/2015	N	**0.0030 B**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U

Notes:

Bold indicates laboratory result detections

Data reported to reporting limit

FD = field duplicate

N = normal sample

µg/L = micrograms per liter

MCL = United States Environmental Protection Agency (EPA) Safe Drinking Water Act Maximum Contaminant Level

PAHs - Polynuclear Aromatic Hydrocarbons

Grey shading indicates one or more regulatory criteria exceedance

Qualifiers

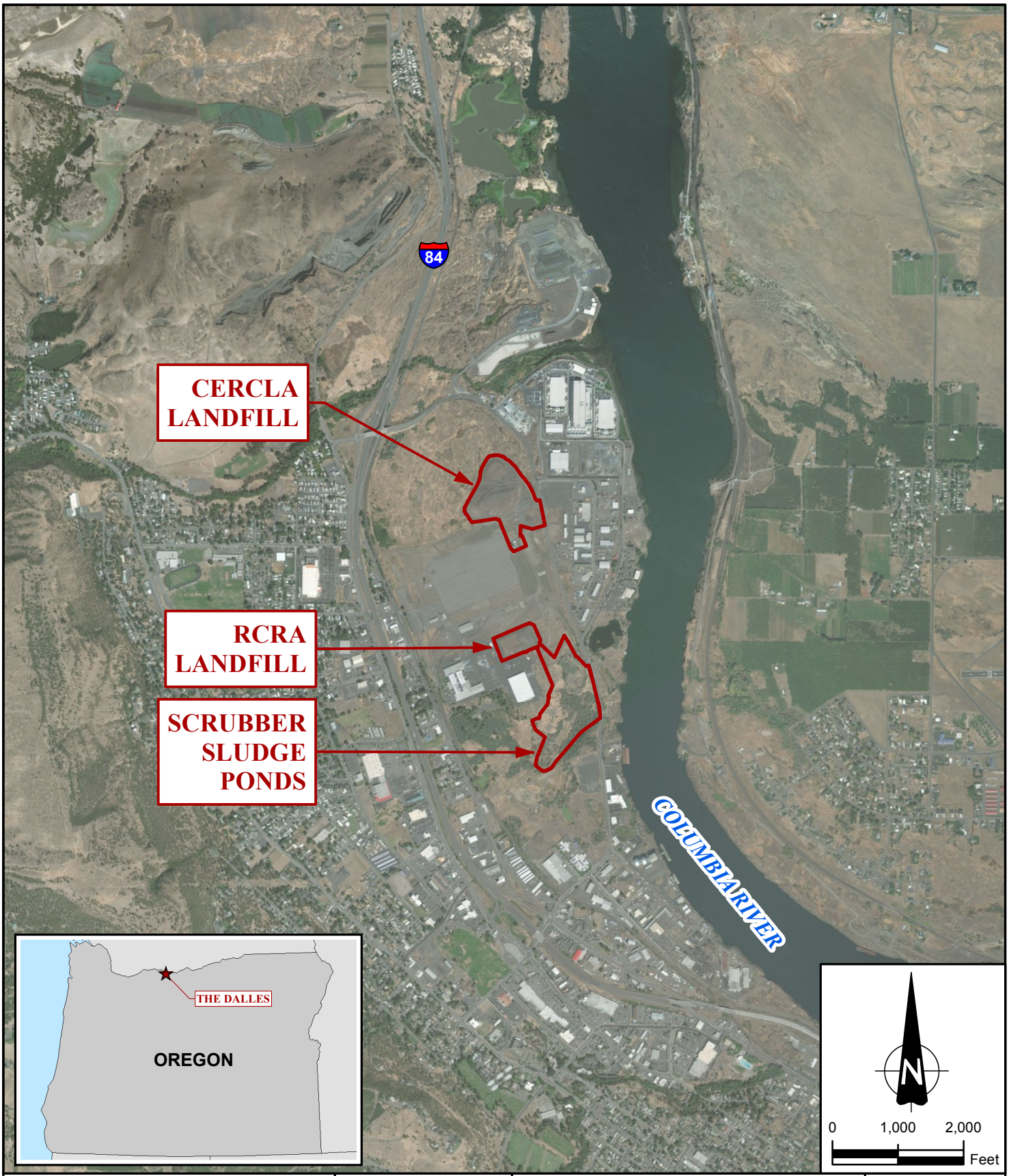
B = blank contamination

J = estimated result

UJ = not detected at or above the stated level, which is an approximate value

U = not detected above indicated reporting limit

FIGURES



LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018
			SCALE: 1 " = 2,000 '
Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		SITE LOCATION	PROJECT NO.: 661M129556
			FIGURE: 1

DRAWN BY: BRJ CHECKED BY: CB

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LEGEND

LOCKHEED MARTIN PROPERTY BOUNDARY

RCRA LANDFILL

SCRUBBER SLUDGE PONDS

CERCLA LANDFILL

CERCLA LEACHATE TREATMENT SYSTEM

LEACHATE COLLECTION SYSTEM

MH #4

MH #2

MH #1

MH #3

LIFT STATION #2

LIFT STATION #1

N

0 200 400 600

1" = 400'

	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224			SCALE: 1 " = 400 '
			SITE LAYOUT	PROJECT NO.: 661M129556
				FIGURE: 2

DRAWN BY: PM CHECKED BY: CJ

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LEGEND

- PIEZOMETER
- WIRELINE COREHOLE
- MONITORING WELL
  - P = PERCHED ZONE
  - S = S AQUIFER
  - S_L = LOWER S AQUIFER
  - A = A AQUIFER
  - B = B AQUIFER
- LOCKHEED MARTIN DECOMMISSIONED WELL
- NORTHWEST ALUMINUM COMPANY (NAC) - PRODUCTION WELL (DC = DECOMMISSIONED)
- NORTHWEST ALUMINUM COMPANY (NAC) - MONITORING WELL
- LOCKHEED MARTIN PROPERTY BOUNDARY

MW13-16P
MW13-16S
MWR-1A
MWR-1B
MW13-11S
MW-34B
MW-34A
NAC1A
MW13-11P
MW-102
MW13-10P
NAC3A
MW-12A
MW-39S
MW-12B
MW13-03P
13-02
P-5
MW13-02P
P-3
P-6
MW13-02S
MW13-02A
WEST DWT
MW-13A
PZ-03
MW-13B
MW13-02B
P-1
MW-101
P-2
EAST DWT
MW-40S
PZ-02
MW13-09P
MW-16A
MW15-18P
MW13-08S
MW-103
MW22S
MW13-13S
MW13-08P
MW-9S
MW-16B
PZ-01
MW-2S
MWR-4B
MW13-13P
MW-9A
MW-16D
MWR-2A
MW-4B
MW-36S
NAC4A
MW-9A
MW-14A
MW-4A
MW-5S
MW-5A
MWR-9A
MWR-2B
MW-9B
MW-14B
MWR-4S
MW-23S
NAC2A
(DC)
MW13-07P
MWR-9B
13-01
MW13-04P
MW-10A
MW13-01P
MW-35S
MW13-01S
MWR-8S
MW-42S
MW-104
MWR-7B
MW-37S
MWR-8S
MW13-05P
MW-24S
MW-8A
MW-6AA
MW-24A
MWR-8A
MW-38S
MW-17S
MW-8B
MR-11D
MWR-6B
MWR-7A
MW-3A
MW-3S
MWR-8B
MWR-15S
MW-41S
MWR-3B
MW-15S
MW-25S
MW-27A
MW-15A
MW-33A
MW15-20P
MW-15B
MW-33B
MW-27S
MW13-06P
MW13-12P
MW-27B
MW13-06S
MW-28S
MW13-06A
MW-26B
MW-1
MW-32S
MW-26A
MW-2
MW-26S
MW-19S
MW-18S
MW13-14S$_L$
MWR-29S
MW-29S
MW13-15S$_L$
MW-5
MW-4L
MW-3
MW-18B
MW-4U
MW-18A
MW-31S
MW-30S
MW15-19S$_L$
MW-20S
MW-20A
MW15-17S$_L$
MW-21S

0 200 400 600
1" = 400'

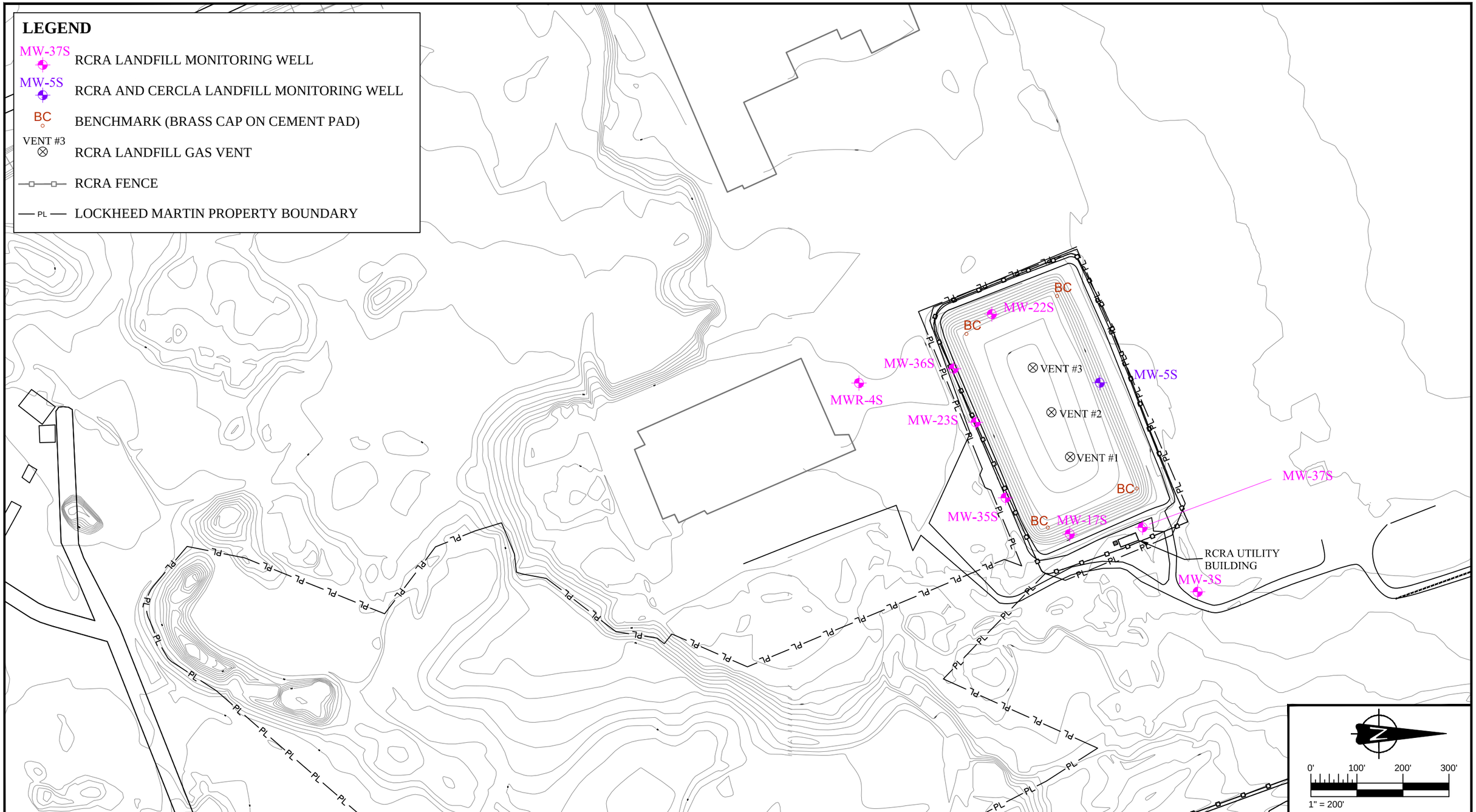
	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018 SCALE: 1 " = 400 '
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		MONITORING WELL LOCATIONS	PROJECT NO.: 661M129556 FIGURE: 3

DRAWN BY: PM CHECKED BY: CB

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\3 - Monitoring Well Locations.mxd - brian.johnson - 5/2/2018 - 10:33:18 AM

LEGEND

- MW-37S — RCRA LANDFILL MONITORING WELL
- MW-5S — RCRA AND CERCLA LANDFILL MONITORING WELL
- BC — BENCHMARK (BRASS CAP ON CEMENT PAD)
- VENT #3 — RCRA LANDFILL GAS VENT
- RCRA FENCE
- PL — LOCKHEED MARTIN PROPERTY BOUNDARY



	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018 SCALE: 1" = 200' PROJECT NO.: 661M129556 FIGURE: 4
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		RCRA LANDFILL MONITORING LOCATIONS	

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_04-06-07-08 RCRA CERCLA Landfill GW Quality Monitoring Locations.dwg — Fig 4 RCRA ML — May. 02, 2018 11:31am — brian.johnson

LEGEND

MW13-02S — MONITORING WELL - S & S_L ZONES

134.64 — POTENTIOMETRIC SURFACE ELEVATION (FEET ABOVE MEAN SEA LEVEL [NAVD88]) (MEASURED 03/14/2018)

NM — NOT MEASURED

ESTIMATED POTENTIOMETRIC SURFACE ELEVATION CONTOUR (FEET ABOVE MEAN SEA LEVEL [NAVD88])

MW13-16S 116.69
MW13-11S 141.48
MW-39S 108.73
MW13-02S 134.64
MW-40S 94.32
MW13-08S 115.16
MW-2S 101.62
MW-41S 97.67
MW13-01S 123.56
MW-42S 123.87
MW-38S 110.72
MWR-15S 114.32
MWR-27S 127.30
MW13-06S 118.19
MW-26S 115.58
MW15-17SL 90.86
MW-36S 129.85
MW-22S 134.48
MWR-4S 132.52
MW-23S 133.55
MW13-13S 134.99
MW-35S 137.02
MW-37S 134.70
MW-17S 135.81
MW-3S 131.72
MW-1 NM
MW-2 NM
MWR-29S 106.46
MW13-14SL 106.04
MW-5 114.53
MW13-15SL 104.62
MW-3 NM
MW15-19SL 101.90
MW-4L NM
MW-4U NM

CERCLA LANDFILL
RCRA LANDFILL

0' 200' 400' 600'
1" = 400'

- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**
- **MW-5S IS NOW CONSIDERED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN INTERVAL OF DEPTH 10.5 TO 20.5-FEET IS ABOVE THE BYRON INTERBED REPORTED IN THE MW-5 BOREHOLE AT DEPTH 26 TO 34-FEET.**

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Portland, OR 97224

wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

POTENTIOMETRIC SURFACE MAP FOR
S & S_L ZONES
MARCH 2018

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 5

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_05-09-10 Potentionmetric Surface Map S-SL-P-A.dwg – Fig 5 S & Sl Zones – May. 02, 2018 11:44am – brian.johnson

LEGEND

- MW-37S — RCRA LANDFILL MONITORING WELL
- MW-5S — RCRA AND CERCLA LANDFILL MONITORING WELL
- BC — BENCHMARK (BRASS CAP ON CEMENT PAD)
- VENT #3 — RCRA LANDFILL GAS VENT
- RCRA FENCE
- PL — LOCKHEED MARTIN PROPERTY BOUNDARY

MW-22S	
Total CN	**0.155**
WAD CN	**0.00840**
Fluoride	**0.471**
Sulfate	**53.1**

MWR-4S	
Total CN	0.00500 U
WAD CN	0.00500 U
Fluoride	**0.158**
Sulfate	**72.4**

MW-36S	
Total CN	0.00500 U
WAD CN	0.00500 U
Fluoride	**0.189**
Sulfate	**82.7**

MW-5S	
Total CN	**0.224**
WAD CN	**0.0126**
Fluoride	**7.55 J**
Sulfate	**20.6 J**

MW-23S	
Total CN	**0.0192**
WAD CN	0.00500 U
Fluoride	**0.268**
Sulfate	**22.7**

MW-35S	
Total CN	**0.0199**
WAD CN	0.00500 U
Fluoride	**0.577**
Sulfate	**91.4**

MW-17S	
Total CN	**0.0179**
WAD CN	0.00500 U
Fluoride	**0.336**
Sulfate	**30.1**

MW-37S	
Total CN	**0.00930**
WAD CN	0.00500 U
Fluoride	**3.08**
Sulfate	**14.7**

MW-3S	
Total CN	0.00500 U
WAD CN	0.00500 U
Fluoride	**0.307**
Sulfate	**30.0**

RCRA UTILITY BUILDING

VENT #1, VENT #2, VENT #3

N

0' 100' 200' 300'

1" = 200'

- **MW-5S IS NOW CONSIDERED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN INTERVAL OF DEPTH 10.5 TO 20.5-FEET IS ABOVE THE BYRON INTERBED REPORTED IN THE MW-5S BOREHOLE LOG AT DEPTH 26 TO 34-FEET.**
- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**

Notes:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
BOLD	DETECTION
CN	CYANIDE
WAD	WEAK ACID DISSOCIABLE

ALL RESULTS REPORTED IN mg/L

DRAWN BY: BRJ CHECKED BY:

LOCKHEED MARTIN CORPORATION

Wood Environment & Infrastructure Solutions, Inc.
7376 S.W. Durham Road
Portland, OR 97224

wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

RCRA LANDFILL
GROUNDWATER QUALITY
MARCH 2018

DATE: MAY 2018
SCALE: 1" = 200'
PROJECT NO.: 661M129556
FIGURE: 6

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_04-06-07-08 RCRA CERCLA Landfill GW Quality Monitoring Locations.dwg — Fig 6 RCRA WQ — May. 02, 2018 11:32am — brian.johnson

LEGEND

- MW-39S — CERCLA LANDFILL MONITORING WELL
- MW-5S — RCRA AND CERCLA LANDFILL MONITORING WELL
- MH #3 — MANHOLE
- APPROXIMATE LOCATIONS OF BURIED PIPELINES (LCS AND OUTFALL)
- CERCLA LANDFILL FENCE
- PL — LOCKHEED MARTIN PROPERTY BOUNDARY

FORMER CERCLA TANK

ELEVATED PAD IN CONTAINMENT
SURGE TANK
LCS PIPE FROM LIFT STATION #1
FORMER DISCHARGE PIPING
PUMPS/ VALVES
SUMP
GATE
CONTAINMENT
RAMP
FENCE
BERM

CERCLA TREATMENT SYSTEM

CERCLA TREATMENT SYSTEM

SUMP
GATE
FENCE

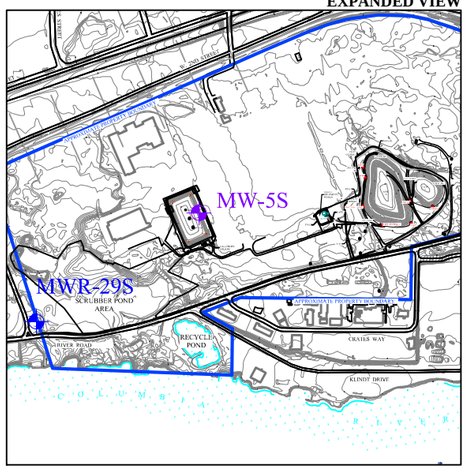
MW-12A
MW-39S
MW-13A
MW-40S
MW-42S
MW-41S
MWR-7A
MW-6AA
MW-38S
MWR-15S
MWR-27S

FENCE
INLET CULVERT
LCS START
CULVERT MH
DWT
MH #4
FENCE
CULVERT OUTLET
LIFT STATION #2
LOBE A
LOBE B
MH #2
MH #1
CULVERT
CULVERT
LIFT STATION #1
MH #3
FENCE

RIVER ROAD
COLUMBIA

VENT #2
VENT #1

EXPANDED VIEW



0' 100' 200' 300'
1" = 200'

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Portland, OR 97224

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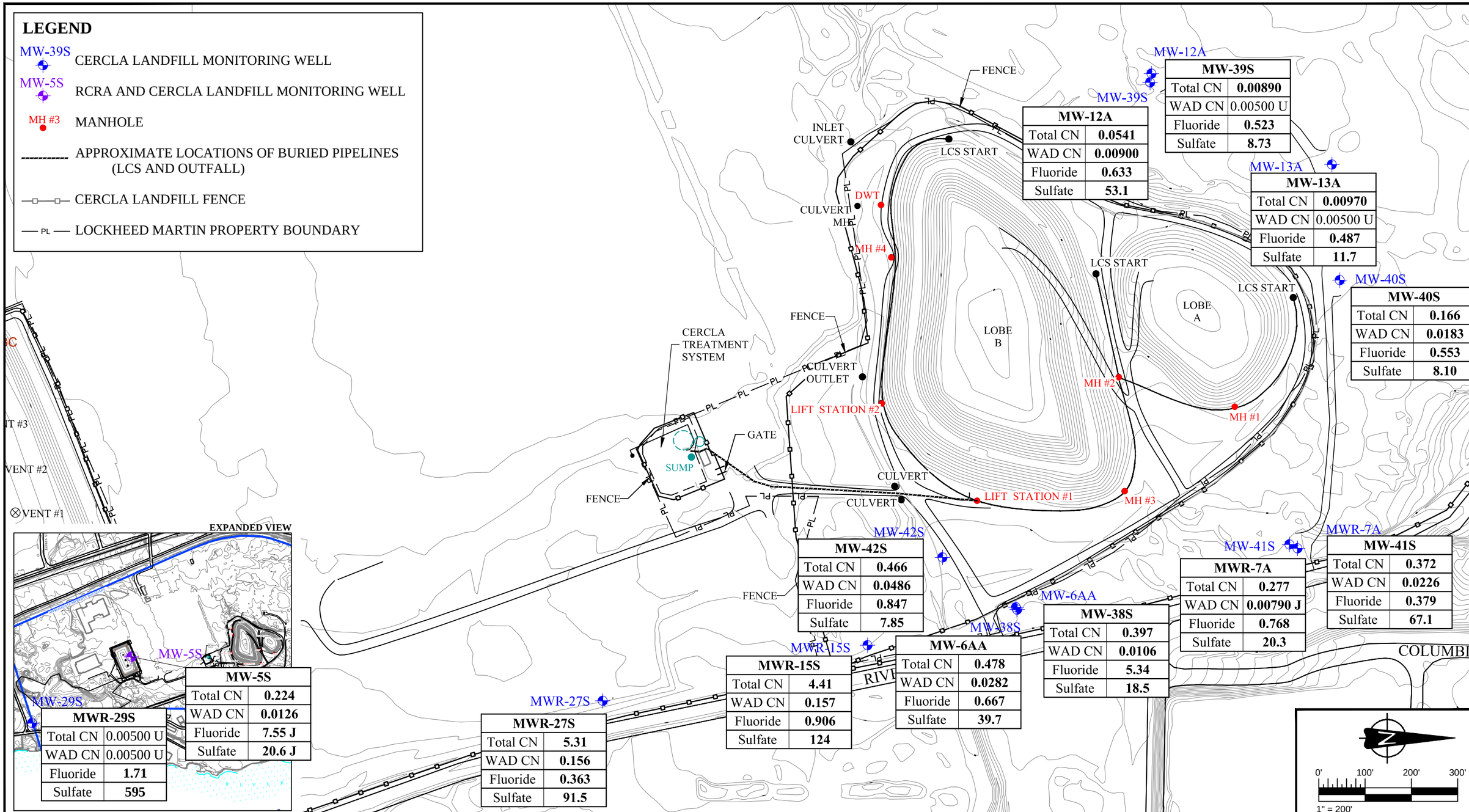
LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

CERCLA LANDFILL MONITORING LOCATIONS

DATE: MAY 2018
SCALE: 1" = 200'
PROJECT NO.: 661M129556
FIGURE: 7

DRAWN BY: BRJ CHECKED BY:

K:\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_04-06-07-08 RCRA CERCLA Landfill GW Quality Monitoring Locations.dwg – Fig 7 CERCLA ML – May. 17, 2018 8:39am – brian.johnson



MW-39S	
Total CN	0.00890
WAD CN	0.00500 U
Fluoride	0.523
Sulfate	8.73

MW-12A	
Total CN	0.0541
WAD CN	0.00900
Fluoride	0.633
Sulfate	53.1

MW-13A	
Total CN	0.00970
WAD CN	0.00500 U
Fluoride	0.487
Sulfate	11.7

MW-40S	
Total CN	0.166
WAD CN	0.0183
Fluoride	0.553
Sulfate	8.10

MW-42S	
Total CN	0.466
WAD CN	0.0486
Fluoride	0.847
Sulfate	7.85

MW-41S	
Total CN	0.372
WAD CN	0.0226
Fluoride	0.379
Sulfate	67.1

MWR-7A	
Total CN	0.277
WAD CN	0.00790 J
Fluoride	0.768
Sulfate	20.3

MW-38S	
Total CN	0.397
WAD CN	0.0106
Fluoride	5.34
Sulfate	18.5

MW-6AA	
Total CN	0.478
WAD CN	0.0282
Fluoride	0.667
Sulfate	39.7

MWR-15S	
Total CN	4.41
WAD CN	0.157
Fluoride	0.906
Sulfate	124

MWR-27S	
Total CN	5.31
WAD CN	0.156
Fluoride	0.363
Sulfate	91.5

MW-5S	
Total CN	0.224
WAD CN	0.0126
Fluoride	7.55 J
Sulfate	20.6 J

MWR-29S	
Total CN	0.00500 U
WAD CN	0.00500 U
Fluoride	1.71
Sulfate	595

Notes:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
BOLD	DETECTION
CN	CYANIDE
WAD	WEAK ACID DISSOCIABLE

ALL RESULTS REPORTED IN mg/L

LOCKHEED MARTIN CORPORATION

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wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

CERCLA LANDFILL
GROUNDWATER QUALITY
MARCH 2018

DATE MAY 2018
SCALE 1" = 200'
PROJECT NO. 661M129556
FIGURE 8

DRAWN BY: BRJ CHECKED BY:

K:\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_04-06-07-08 RCRA CERCLA Landfill GW Quality Monitoring Locations.dwg – Fig 8 CERCL WQ – May. 17, 2018 8:37am – brian.johnson

LEGEND

MW13-10P — MONITORING WELL - PERCHED ZONE

138.80 — POTENTIOMETRIC SURFACE ELEVATION (FEET ABOVE MEAN SEA LEVEL [NAVD88]) (MEASURED 03/14/2018)

NM — NOT MEASURED

ESTIMATED POTENTIOMETRIC SURFACE ELEVATION CONTOUR (FEET ABOVE MEAN SEA LEVEL [NAVD88])

LEACHATE COLLECTION SYSTEM:

GRAVEL-FILLED TRENCH AND DRAINLINE (APPROXIMATE LOCATION)

LIFT STATION

MH#3 / 127.5 — MANHOLE / INVERT ELEVATION AT LIFT STATION/MANHOLE

MW13-16P NM
MW13-11P NM
MW13-10P 138.80
MW13-03P 140.05
PZ-03 NM
PZ-02 NM
PZ-01 NM
MW13-04P 130.82
MW13-05P 129.07
MW13-01P 130.45
MW13-06P 131.61
MW13-12P 125.31
MW15-20P 127.87
MW15-18P 136.09
MW-5S 137.27
MW13-13P NM
MW13-09P NM
MW13-08P 131.42
MW13-07P 132.76
P-3 NM
P-5 NM
P-6 NM
P-2 NM
P-1 NM
MW13-02P 137.68
WEST DWT NM
EAST DWT NM
MH#4 124.1
MH#2 129.1
MH#1
MH#3 127.5
LIFT STATION #2 114.9
LIFT STATION #1 114.9
CERCLA LANDFILL
RCRA LANDFILL

138 140 136 134 132 130 128 126

0' 200' 400' 600'
1" = 400'

- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**
- **MW-5S IS NOW CONSIDERED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN INTERVAL OF DEPTH 10.5 TO 20.5-FEET IS ABOVE THE BYRON INTERBED REPORTED IN THE MW-5 BOREHOLE AT DEPTH 26 TO 34-FEET.**

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LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

POTENTIOMETRIC SURFACE MAP FOR PERCHED ZONE
MARCH 2018

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 9

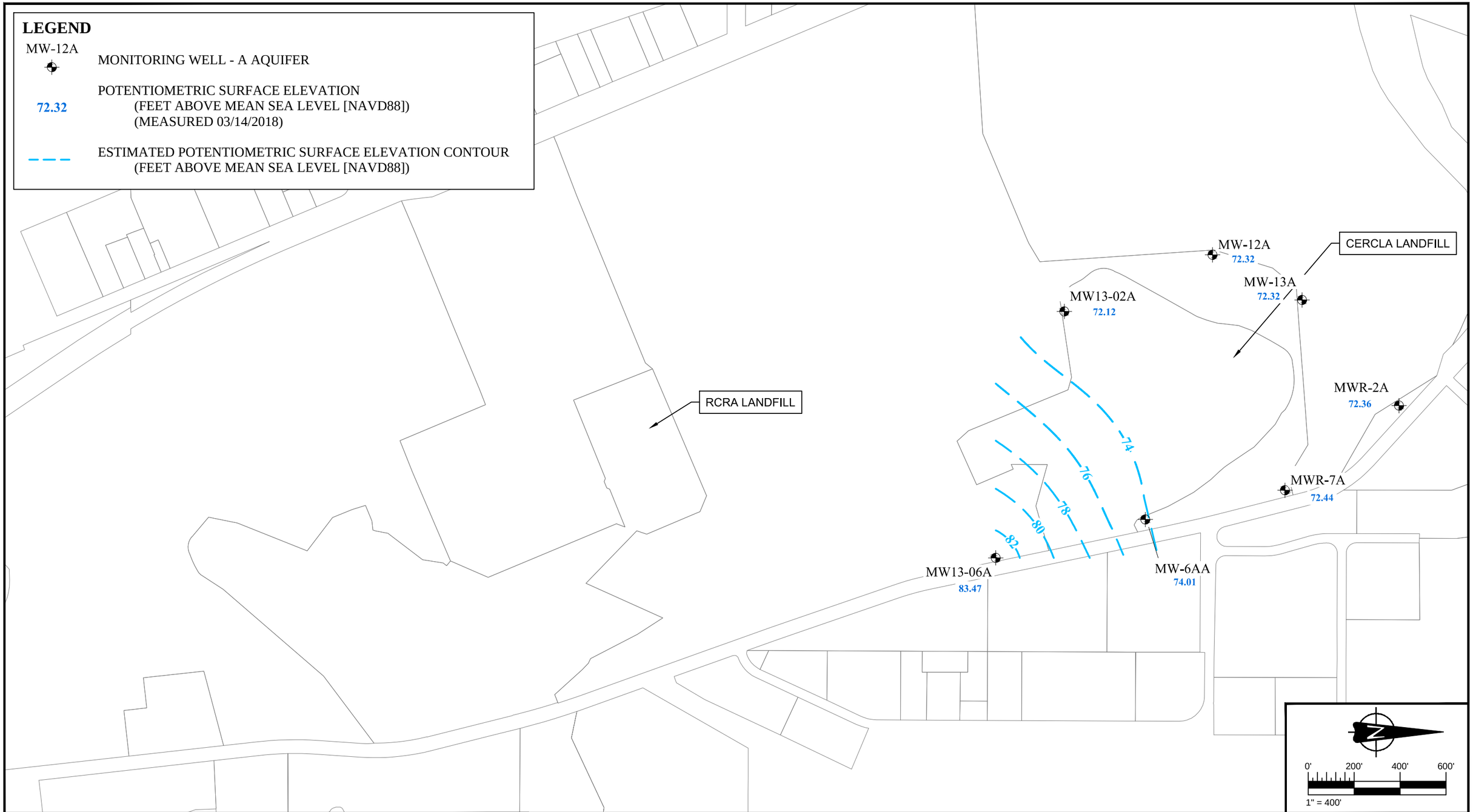
\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_05-09-10 Potentiometric Surface Map S-SL-P-A.dwg — Fig 9 Perched Zone — May. 02, 2018 11:45am — brian.johnson

LEGEND

MW-12A
MONITORING WELL - A AQUIFER

72.32
POTENTIOMETRIC SURFACE ELEVATION
(FEET ABOVE MEAN SEA LEVEL [NAVD88])
(MEASURED 03/14/2018)

ESTIMATED POTENTIOMETRIC SURFACE ELEVATION CONTOUR
(FEET ABOVE MEAN SEA LEVEL [NAVD88])



	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018 SCALE: 1" = 400'
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		POTENTIOMETRIC SURFACE MAP FOR A AQUIFER MARCH 2018	PROJECT NO.: 661M129556 FIGURE: 10

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_05-09-10 Potentionmetric Surface Map S-SL-P-A.dwg – Fig 10 A Aquifer – May. 02, 2018 11:45am – brian.johnson

LEGEND

✦	MONITORING WELL - PERCHED ZONE
03/18	MONTH/YEAR OF SAMPLING EVENT
0.0024	WAD CYANIDE CONCENTRATION (mg/L)
0.005	TOTAL CYANIDE CONCENTRATION (mg/L)

MW13-16P			
07/14	10/14	01/15	04/15
0.0050 U	**0.0013 J**	0.0050 UJ	0.0050 U
0.0047 U	*0.0047 U*	***0.0014 J***	***0.0038 J***

MW13-11P			
07/14	10/14	01/15	04/15
0.0050 U	0.010 U	0.0050 UJ	0.0050 U
0.0029 J	***0.001 J***	***0.0019 J***	*0.0047 U*

MW13-10P			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0047 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

WEST DWT			
07/14	10/14	01/15	04/15
0.0055	**0.0039 J**	**0.0096**	**0.0045 J**
0.0470	***0.228***	***0.0940***	***0.396***

P-5			
--	--	--	01/15
--	--	--	**0.0009 J**
--	--	--	***0.0017 J***

MW13-03P			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0047 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

P-3			
08/14	10/14	01/15	04/15
0.0037 J	**0.0017 J**	**0.0076**	**0.0008 J**
0.0047 J	***0.0079***	***0.0183***	***0.0077***

P-6			
--	--	01/15	04/15
--	--	**0.0288**	**0.0167**
--	--	*0.0047 U*	***0.136***

PZ-03			
07/14	10/14	01/15	04/15
0.010 U	0.0050 U	0.0050 U	0.0050 U
0.0047 U	*0.0047 U*	*0.0047 U*	*0.0047 U*

MW13-02P			
09/16	03/17	09/17	03/18
0.0290	**0.0130**	**0.0276**	**0.0100**
0.108	***0.143***	***0.113***	***0.130***

P-1			
08/14	10/14	01/15	04/15
0.0061	**0.0045 J**	**0.0295**	**0.0098**
0.0278	***0.0226***	***0.0427 J***	***0.0422***

MW13-09P			
07/14	10/14	01/15	04/15
0.0050 U	0.010 U	0.0050 UJ	0.0050 U
0.0043 J	***0.0014 J***	*0.0047 U*	*0.0047 U*

MW15-18P				
12/16	03/17	09/17	03/18	
0.00500 U	0.00500 U	0.00500 U	0.00500 U	
0.00600	*0.00500 U*	***0.00680***	*0.00500 U*	

EAST DWT			
07/14	10/14	01/15	04/15
0.0115	**0.0103**	**0.0110**	**0.0107**
0.126	***0.0672***	***0.0555 J***	***0.0750***

P-2			
--	08/14	01/15	04/15
--	**0.0110**	**0.0015 J**	**0.0079**
--	***0.0740***	***0.0248***	***0.0515***

PZ-02			
07/14	10/14	01/15	04/15
0.003 J	**0.0069**	**0.0017 J**	**0.0035 J**
0.0220	***0.0274***	***0.0184***	***0.0176***

MW13-08P			
09/16	03/17	09/17	03/18
0.353	**0.0214**	**0.0373**	**0.0212**
1.29	***1.43***	***1.25***	***1.08***

MW13-13P			
07/14	10/14	01/15	04/15
0.0050 U	0.0050 U	0.0050 UJ	0.0050 U
0.0024 J	***0.0020 J***	***0.0031 J***	***0.0018 J***

PZ-01			
--	--	--	01/15
--	--	--	**0.0055**
--	--	--	***0.0026 J***

MW13-01P			
09/16	03/17	09/17	03/18
1.91	**1.04**	**2.08**	**1.24**
46.1	***52.4***	***47.1***	***47.7***

MW-5S			
09/16	03/17	09/17	03/18
0.0554	**0.00830**	**0.0229**	**0.0126**
0.402	***0.193***	***0.460***	***0.224***

MW13-07P			
09/16	03/17	09/17	03/18
0.275	**0.0840**	**0.0759**	**0.0505**
8.29	***19.2***	***16.8***	***8.55***

MW13-04P			
09/16	03/17	09/17	03/18
0.0249	**0.0150**	**0.0202**	**0.0114**
0.182	***0.143***	***0.232***	***0.101***

MW13-05P			
09/16	03/17	09/17	03/18
0.0587	**0.0172**	**0.0424**	**0.0197**
0.395	***0.529***	***0.515***	***0.499***

MW15-20P				
12/16	03/17	09/17	03/18	
0.00500 U	0.00500 U	0.00500 U	0.00500 U	
0.00500 U	*0.00500 U*	*0.00500 U*	*0.00500 U*	

MW13-06P			
09/16	03/17	09/17	03/18
0.343	**0.0516**	**0.0719**	**0.0636**
2.07	***2.51***	***2.27***	***2.15***

MW13-12P			
09/16	03/17	09/17	03/18
0.0145	0.00500 U	**0.0103**	**0.00640**
0.228	***0.0580***	***0.304***	***0.146***

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
0.825	SCREENING LEVEL EXCEEDANCE: WAD CYANIDE COMPARISON LEVEL 0.77 mg/L
--	NOT SAMPLED

LOCKHEED MARTIN CORPORATION

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wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

CYANIDE CONCENTATIONS IN PERCHED ZONE (FOUR MOST RECENT EVENTS)

DATE: MAY 2018

SCALE: 1" = 400'

PROJECT NO.: 661M129556

FIGURE: 11

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_11-15-19-22-25-28 Cyanide Concentrations in P-S-SL-A-B Zones.dwg – Fig 11 Perched Zone – May. 17, 2018 7:23am – brian.johnson

LEGEND

- MONITORING WELL - PERCHED ZONE
- 03/18 MONTH/YEAR OF SAMPLING EVENT
- 0.0024 FLUORIDE CONCENTRATION (mg/L)

MW13-16P			
07/14	10/14	01/15	04/15
0.4 J	**1.2**	**0.61**	**0.37**

MW13-11P			
07/14	10/14	01/15	04/15
0.97	**0.50**	**0.38**	**0.34**

MW13-10P			
09/16	03/17	09/17	03/18
2.15	**2.00**	**2.24**	**2.37**

WEST DWT			
07/14	10/14	01/15	04/15
8.0	**8.05**	**5.6**	**7.1**

P-5			
--	--	--	01/15
--	--	--	**1.16**

MW13-03P			
09/16	03/17	09/17	03/18
0.29	**0.274**	**0.333**	**0.234**

P-3			
08/14	10/14	01/15	04/15
17.5	**18.5**	**18.1**	**11.5**

PZ-03			
07/14	10/14	01/15	04/15
0.21	**0.19 J**	**0.31**	**0.10 J**

MW13-02P			
09/16	03/17	09/17	03/18
6.02	**7.58**	**6.83**	**6.84**

P-6			
--	--	01/15	04/15
--	--	**11.8**	**6.4**

P-1			
08/14	10/14	01/15	04/15
5.5	**5.72**	**5.5**	**6.0**

MW13-09P			
07/14	10/14	01/15	04/15
1.21	**1.03**	**0.57**	**0.46**

MW15-18P			
12/16	03/17	09/17	03/18
16.2	**14.5**	**16.3**	**13.2**

EAST DWT			
07/14	10/14	01/15	04/15
15.6	**19.2**	**16.5**	**14.8**

PZ-02			
07/14	10/14	01/15	04/15
0.28	**0.27**	**0.32**	**0.20**

P-2			
--	08/14	01/15	04/15
--	**46.9**	**16.0**	**32.2**

MW13-08P			
09/16	03/17	09/17	03/18
4.95	**5.21**	**5.98**	**5.18**

PZ-01			
--	--	--	01/15
--	--	--	**0.51**

MW13-13P			
07/14	10/14	01/15	04/15
1.16	**0.44**	**0.37**	**0.34**

MW-5S			
09/16	03/17	09/17	03/18
7.63	**6.60**	**9.21**	**7.55 J**

MW13-01P			
09/16	03/17	09/17	03/18
17.8	**19.4**	**20.4**	**19.9**

MW13-07P			
09/16	03/17	09/17	03/18
164	**115**	**106**	**105**

MW13-04P			
09/16	03/17	09/17	03/18
9.6	**10.8**	**10.0**	**11.3**

MW13-05P			
09/16	03/17	09/17	03/18
3.78	**3.75**	**4.22**	**4.00**

MW15-20P			
12/16	03/17	09/17	03/18
4.69	**3.52**	**0.923**	**2.90**

MW13-06P			
09/16	03/17	09/17	03/18
3.88	**4.12**	**4.05**	**3.95**

MW13-12P			
09/16	03/17	09/17	03/18
12.3	**16.0**	**12.3**	**13.6**

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
9.8	SCREENING LEVEL EXCEEDANCE: FLUORIDE COMPARISON LEVEL 9.7 mg/L
--	NOT SAMPLED

DRAWN BY: BRJ CHECKED BY:

LOCKHEED MARTIN CORPORATION

Wood Environment & Infrastructure Solutions, Inc.
7376 S.W. Durham Road
Portland, OR 97224

wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

FLUORIDE CONCENTATIONS IN PERCHED ZONE (FOUR MOST RECENT EVENTS)

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 12

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_12-16-20-23-26-29 Fluoride Concentrations in P-S-SL-A Zones.dwg – Fig 12 Perched Zone – May. 17, 2018 7:27am – brian.johnson

LEGEND

- MONITORING WELL - PERCHED ZONE
- 03/18 MONTH/YEAR OF SAMPLING EVENT
- 0.0024 SULFATE CONCENTRATION (mg/L)

MW13-16P			
07/14	10/14	01/15	04/15
207	**215**	**194**	**199**

MW13-11P			
07/14	10/14	01/15	04/15
99.0	**128**	**98.7**	**103**

MW13-10P			
09/16	03/17	09/17	03/18
138	**69.2**	**132**	**150**

WEST DWT			
07/14	10/14	01/15	04/15
49.5	**120**	**41.4**	**72.1 J**

P-5			
--	--	--	01/15
--	--	--	**12.3**

MW13-03P			
09/16	03/17	09/17	03/18
12.5	**12.4**	**12.3**	**10.8**

P-3			
08/14	10/14	01/15	04/15
65.7	**66.8**	**68.5**	**99.0**

PZ-03			
07/14	10/14	01/15	04/15
3.56	**4.12**	**3.35**	**3.13**

MW13-02P			
09/16	03/17	09/17	03/18
107	**102**	**106**	**99.8**

P-6			
--	--	01/15	04/15
--	--	**81.7**	**50.5**

P-1			
08/14	10/14	01/15	04/15
39.9	**45.5**	**47.8**	**55.0**

MW13-09P			
07/14	10/14	01/15	04/15
359	**417**	**217**	**256**

MW15-18P			
12/16	03/17	09/17	03/18
40.1	**14.3**	**34.1**	**31.1**

EAST DWT			
07/14	10/14	01/15	04/15
67.3	**72.5**	**66.6**	**77.5**

PZ-02			
07/14	10/14	01/15	04/15
14.0	**59.0**	**3.74**	**11.2**

P-2			
--	08/14	01/15	04/15
--	**52.1**	**39.8**	**49.2**

MW13-08P			
09/16	03/17	09/17	03/18
823	**786**	**799**	**787**

PZ-01			
--	--	--	01/15
--	--	--	**10.8**

MW13-13P			
07/14	10/14	01/15	04/15
51.8	**56.2**	**49.0**	**47.3**

MW-5S			
09/16	03/17	09/17	03/18
73.3	**49.0**	**71.5**	**20.6 J**

MW13-01P			
09/16	03/17	09/17	03/18
130	**130**	**132**	**130**

MW13-07P			
09/16	03/17	09/17	03/18
125	**213**	**220**	**86.6**

MW13-04P			
09/16	03/17	09/17	03/18
51.0	**41.7**	**61.9**	**36.5**

MW13-05P			
09/16	03/17	09/17	03/18
85.4	**83.1**	**83.3**	**79.5**

MW15-20P			
12/16	03/17	09/17	03/18
11.6	**12.9**	**29.5**	**19.6**

MW13-06P			
09/16	03/17	09/17	03/18
610	**597**	**619**	**590**

MW13-12P			
09/16	03/17	09/17	03/18
441	**65.3**	**408**	**162**

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
4,000	SCREENING LEVEL EXCEEDANCE: SULFATE COMPARISON LEVEL 3,020 mg/L
--	NOT SAMPLED

LOCKHEED MARTIN CORPORATION

Wood Environment & Infrastructure Solutions, Inc.
7376 S.W. Durham Road
Portland, OR 97224

wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

SULFATE CONCENTATIONS IN PERCHED ZONE (FOUR MOST RECENT EVENTS)

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 13

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_13-17-21-24-27-30 Sulfate Concentrations in P-S-SL-A Zones.dwg – Fig 13 Perched Zone – May. 17, 2018 7:31am – brian.johnson

LEGEND

- MONITORING WELL - PERCHED ZONE
- 03/16 MONTH/YEAR OF SAMPLING EVENT
- 0.0024 PAH CONCENTRATION (µg/L)

	PAH Compound
Baa	Benzo(a)anthracene
Bap	Benzo(a)pyrene
Bpf	Benzo(b)fluoranthene
Bkf	Benzo(k)fluoranthene
C	Chrysene
D	Dibenzo(a,h)anthracene
I	Indeno(1,2,3-cd)pyrene

MW13-10P

	07/14	10/14	01/15	04/15
Baa	**0.0034 B**	**0.0027 J**	0.034 U	**0.0037 B**
Bap	0.019 U	0.020 U	0.020 U	0.020 U
Bbf	0.019 U	0.020 U	0.020 U	0.020 U
Bkf	0.019 U	0.020 U	0.020 U	0.020 U
C	0.019 U	0.020 U	0.020 U	0.020 U
D	0.019 U	0.020 U	0.020 U	0.020 U
I	0.019 U	0.020 U	0.020 U	0.020 U

WEST DWT

	–	10/14	01/15	04/15
Baa	–	**0.042**	0.019 U	**0.024**
Bap	–	**0.021**	0.019 U	**0.0077 J**
Bbf	–	**0.029**	0.019 U	**0.011 J**
Bkf	–	**0.0052 J**	0.019 U	**0.0033 J**
C	–	**0.17**	0.019 U	**0.085**
D	–	**0.0062 J**	0.019 U	0.019 U
I	–	**0.012 J**	0.019 U	**0.0037 J**

MW13-16P

	07/14	10/14	01/15	04/15
Baa	**0.0044 B**	**0.0032 B**	0.019 U	**0.011 B**
Bap	0.020 U	0.020 U	0.019 U	**0.0099 J**
Bbf	0.020 U	0.020 U	0.019 U	**0.015 J**
Bkf	0.020 U	0.020 U	0.019 U	**0.0057 J**
C	0.020 U	0.020 U	0.019 U	**0.011 J**
D	**0.0031 B**	0.020 U	0.019 U	0.019 U
I	**0.0074 B**	0.020 U	0.019 U	**0.0067 J**

P-5

	--	--	--	01/15
Baa	--	--	--	**0.0042 B**
Bap	--	--	--	0.019 U
Bbf	--	--	--	0.019 U
Bkf	--	--	--	0.019 U
C	--	--	--	0.019 U
D	--	--	--	0.019 U
I	--	--	--	0.019 U

P-6

	--	--	01/15	04/15
Baa	--	--	**0.0069 B**	**0.0075 B**
Bap	--	--	0.020 U	**0.0055 J**
Bbf	--	--	0.020 U	**0.0080 J**
Bkf	--	--	0.020 U	**0.0047 J**
C	--	--	**0.0063 J**	**0.0067 J**
D	--	--	0.020 U	**0.0063 J**
I	--	--	**0.0047 J**	**0.0089 J**

MW13-11P

	08/14	10/14	01/15	04/15
Baa	**0.015 J**	**0.0090 B**	0.020 U	**0.0069 B**
Bap	**0.012 J**	**0.0080 J**	0.020 U	0.021 U
Bbf	**0.019 J**	**0.0050 J**	0.020 U	0.021 U
Bkf	**0.0054 J**	0.019 U	0.020 U	0.021 U
C	**0.024 J**	**0.0059 J**	0.020 U	0.021 U
D	0.020 UJ	0.019 U	0.020 U	0.021 U
I	**0.011 J**	0.019 U	0.020 U	0.021 U

MW13-02P

	08/14	10/14	01/15	04/15
Baa	**0.0051 B**	**0.0050 J**	**0.0064 J**	**0.0047 B**
Bap	0.020 U	0.020 U	0.020 U	0.019 U
Bbf	0.020 U	0.020 U	0.020 U	0.019 U
Bkf	0.020 U	0.020 U	0.020 U	0.019 U
C	0.020 U	0.020 U	**0.0054 J**	0.019 U
D	0.020 U	0.020 U	0.020 U	0.019 U
I	0.020 U	0.020 U	0.020 U	0.019 U

MW13-03P

	07/14	10/14	01/15	04/15
Baa	**0.0045 B**	**0.0031 B**	**0.0040 B**	**0.0034 B**
Bap	0.020 U	0.020 U	0.020 U	0.019 U
Bbf	0.020 U	0.020 U	0.020 U	0.019 U
Bkf	0.020 U	0.020 U	0.020 U	0.019 U
C	0.020 U	0.020 U	0.020 U	0.019 U
D	0.020 U	0.020 U	0.020 U	0.019 U
I	0.020 U	0.020 U	0.020 U	0.019 U

MW15-18P

	03/16	06/16	09/16	12/16
Baa	0.0060 U	0.020 U	0.020 U	0.0400 U
Bap	0.020 U	0.020 U	0.020 U	0.0400 U
Bbf	0.020 U	0.020 U	0.020 U	0.0400 U
Bkf	0.020 U	0.020 U	0.020 U	0.0400 U
C	0.020 U	0.020 U	0.020 U	0.0400 U
D	0.020 U	0.020 UJ	0.020 U	0.0400 U
I	0.020 U	0.020 U	0.020 U	0.0400 U

P-3

	–	10/14	01/15	04/15
Baa	–	**0.0051 J**	**0.0072 B**	**0.0032 B**
Bap	–	0.020 U	**0.0065 J**	0.020 U
Bbf	–	0.020 U	**0.0076 J**	0.020 U
Bkf	–	0.020 U	0.020 U	0.020 U
C	–	0.020 U	**0.0050 J**	0.020 U
D	–	0.020 U	0.020 U	0.020 U
I	–	0.020 U	**0.0055 J**	0.020 U

P-1

	08/14	10/14	01/15	04/15
Baa	**0.014 B**	**0.0088 J**	**0.011 B**	**0.0068 B**
Bap	**0.018 J**	**0.0076 J**	**0.013 J**	**0.0070 J**
Bbf	**0.025**	**0.012 J**	**0.015 J**	**0.0091 J**
Bkf	**0.0093 J**	**0.0030 J**	**0.0052 J**	**0.0037 J**
C	**0.017 J**	**0.0060 J**	**0.017 J**	**0.0067 J**
D	**0.0029 J**	0.020 U	0.019 U	0.019 U
I	**0.017 J**	**0.0070 J**	**0.013 J**	**0.0056 J**

MW13-13P

	08/14	10/14	01/15	04/15
Baa	**0.0071 B**	**0.014 J**	0.020 U	**0.0098 B**
Bap	0.020 U	**0.014 J**	0.020 U	**0.0076 J**
Bbf	**0.0050 J**	**0.020**	0.020 U	**0.0089 J**
Bkf	0.020 U	**0.0072 J**	0.020 U	0.020 U
C	**0.0039 J**	**0.015 J**	0.020 U	**0.0068 J**
D	0.020 U	**0.0033 J**	0.020 U	0.020 U
I	**0.0032 J**	**0.014 J**	0.020 U	**0.0049 J**

P-2

	--	--	01/15	04/15
Baa	--	--	**0.0068 B**	**0.0046 B**
Bap	--	--	**0.0052 J**	0.020 U
Bbf	--	--	**0.0051 J**	0.020 U
Bkf	--	--	0.020 U	0.020 U
C	--	--	**0.0042 J**	0.020 U
D	--	--	0.020 U	0.020 U
I	--	--	**0.0051 J**	0.020 U

EAST DWT

	--	10/14	01/15	04/15
Baa	--	**0.0045 J**	**0.0064 B**	**0.0036 B**
Bap	--	0.020 U	0.020 U	0.019 U
Bbf	--	0.020 U	0.020 U	0.019 U
Bkf	--	0.020 U	0.020 U	0.019 U
C	--	0.020 U	0.020 U	0.019 U
D	--	0.020 U	0.020 U	0.019 U
I	--	0.020 U	0.020 U	0.019 U

PZ-01

	--	--	--	01/15
Baa	--	--	--	0.020 U
Bap	--	--	--	0.020 U
Bbf	--	--	--	0.020 U
Bkf	--	--	--	0.020 U
C	--	--	--	0.020 U
D	--	--	--	0.020 U
I	--	--	--	0.020 U

MW13-09P

	08/14	10/14	01/15	04/15
Baa	**0.034**	**0.0061 B**	0.020 U	**0.0045 B**
Bap	**0.034**	0.019 U	0.020 U	0.020 U
Bbf	**0.050**	0.019 U	0.020 U	0.020 U
Bkf	**0.016 J**	0.019 U	0.020 U	0.020 U
C	**0.052**	0.019 U	0.020 U	0.020 U
D	**0.0045 J**	0.019 U	0.020 U	0.020 U
I	**0.031**	**0.0028 J**	0.020 U	0.020 U

MW13-07P

	07/14	10/14	01/15	04/15
Baa	**0.071**	**0.075**	**0.032**	**0.16**
Bap	**0.16**	**0.086**	**0.037**	**0.24**
Bbf	**0.33**	**0.17**	**0.061**	**0.38**
Bkf	**0.085**	**0.055**	**0.022**	**0.13**
C	**0.12**	**0.081**	**0.055**	**0.24**
D	**0.016 J**	**0.012 J**	**0.0036 J**	**0.036**
I	**0.10**	**0.051**	**0.023**	**0.20**

MW13-05P

	07/14	10/14	01/15	04/15
Baa	**0.0043 B**	**0.0050 J**	**0.0037 J**	**0.0063 J**
Bap	0.020 U	0.020 U	0.019 U	0.020 U
Bbf	0.020 U	0.020 U	0.019 U	0.020 U
Bkf	0.020 U	0.020 U	0.019 U	0.020 U
C	0.020 U	**0.0038 J**	0.019 U	**0.0047 J**
D	0.020 U	0.020 U	0.019 U	0.020 U
I	0.020 U	0.020 U	0.019 U	0.020 U

PZ-02

	--	--	01/15	04/15
Baa	--	--	0.019 U	**0.0037 B**
Bap	--	--	0.019 U	0.020 U
Bbf	--	--	0.019 U	0.020 U
Bkf	--	--	0.019 U	0.020 U
C	--	--	0.019 U	0.020 U
D	--	--	0.019 U	0.020 U
I	--	--	0.019 U	0.020 U

MW15-20P

	03/16	06/16	09/16	12/16
Baa	0.0049 U	0.020 U	**0.0038 J**	0.0388 U
Bap	0.020 U	0.020 U	0.020 U	0.0388 U
Bbf	0.020 U	0.020 U	0.020 U	0.0388 U
Bkf	0.020 U	0.020 U	0.020 U	0.0388 U
C	0.020 U	**0.0068 J**	0.020 U	0.0388 U
D	0.020 U	0.020 UJ	0.020 U	0.0388 U
I	0.020 U	0.020 U	0.020 U	0.0388 U

MW13-12P

	07/14	10/14	01/15	04/15
Baa	**0.0083 B**	**0.0085 J**	**0.013 B**	**0.0070 B**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	0.020 U	0.020 U	0.020 U	0.020 U
I	0.020 U	0.020 U	0.020 U	0.020 U

MW13-06P

	07/14	10/14	01/15	04/15
Baa	**0.0050 B**	**0.0072 J**	0.025 U	**0.0095 B**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	**0.0043 J**
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	**0.0067 J**
D	0.020 U	0.020 U	0.020 U	0.020 U
I	0.020 U	0.020 U	0.020 U	0.020 U

MW13-01P

	08/14	10/14	01/15	04/15
Baa	**0.0053 B**	**0.0036 J**	0.020 U	**0.0053 B**
Bap	0.020 U	0.020 U	0.020 U	0.019 U
Bbf	0.020 U	0.020 U	0.020 U	0.019 U
Bkf	0.020 U	0.020 U	0.020 U	0.019 U
C	**0.0038 J**	0.020 U	0.020 U	0.019 U
D	0.020 U	0.020 U	0.020 U	0.019 U
I	0.020 U	0.020 U	0.020 U	0.019 U

MW13-04P

	07/14	10/14	01/15	04/15
Baa	**0.0047 B**	**0.0039 B**	0.019 U	**0.0043 B**
Bap	0.019 U	0.020 U	0.019 U	0.020 U
Bbf	0.019 U	0.020 U	0.019 U	0.020 U
Bkf	0.019 U	0.020 U	0.019 U	0.020 U
C	0.019 U	**0.0035 J**	0.019 U	0.020 U
D	0.019 U	0.020 U	0.019 U	0.020 U
I	0.019 U	0.020 U	0.019 U	0.020 U

MW13-08P

	07/14	10/14	01/15	04/15
Baa	**0.0047 J**	**0.0032 J**	0.020 U	**0.0072 B**
Bap	0.020 U	0.019 U	0.020 U	0.020 U
Bbf	**0.0045 J**	0.019 U	0.020 U	0.020 U
Bkf	0.020 U	0.019 U	0.020 U	0.020 U
C	0.020 U	0.019 U	0.020 U	**0.0044 J**
D	0.020 U	0.019 U	0.020 U	0.020 U
I	**0.0037 J**	0.019 U	0.020 U	0.020 U

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
µg/L	MICROGRAMS PER LITER
0.250	SCREENING LEVEL EXCEEDANCE: Bap PAH MCL 0.200 µg/L
--	NOT SAMPLED

LOCKHEED MARTIN CORPORATION

Wood Environment & Infrastructure Solutions, Inc.
7376 S.W. Durham Road
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wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

PAH CONCENTATIONS IN PERCHED ZONE (FOUR MOST RECENT EVENTS)

DATE: MAY 2018

SCALE: 1" = 400'

PROJECT NO.: 661M129556

FIGURE: 14

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_14-18 PAH Concentrations in P-S-SL Zones.dwg – Fig 14 Perched Zone – May. 02, 2018 12:18pm – brian.johnson

LEGEND

- MONITORING WELL - S & S_L ZONES
- 03/18 — MONTH/YEAR OF SAMPLING EVENT
- 0.0024 — WAD CYANIDE CONCENTRATION (mg/L)
- *0.005* — TOTAL CYANIDE CONCENTRATION (mg/L)

MW-2			
08/14	10/14	01/15	04/15
0.0050 U	0.0050 U	0.0050 UJ	0.0050 U
0.0047 U	*0.0047 U*	***0.0014 J***	***0.0011 J***

MW-1			
08/14	10/14	01/15	04/15
0.0050 U	0.0050 U	0.0050 UJ	**0.001 J**
0.0047 U	*0.0047 U*	*0.0047 U*	*0.0047 U*

MW-5			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0047 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

MW-4L			
08/14	10/14	01/15	04/15
0.0050 U	0.0050 U	**0.0019 J**	0.0050 U
0.0013 J	*0.0047 U*	***0.0026 J***	***0.0016 J***

MW-4U			
08/14	10/14	01/15	04/15
0.0050 U	0.0050 U	0.0050 UJ	**0.0020 J**
0.0025 J	*0.0047 U*	***0.0017 J***	***0.0012 J***

MWR-29S			
12/16	03/17	09/17	03/18
0.00500 U	0.00500 U	0.00500 U	0.00500 U
0.00500 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

MW-29S			
03/16	09/16	12/16	03/17
0.0050 U	0.0050 U	0.00500 U	0.00500 U
0.0047 U	*0.0047 U*	*0.00500 U*	*0.00500 U*

MW-3			
08/14	10/14	01/15	04/15
0.0013 J	**0.0012 J**	0.0050 UJ	0.0050 U
0.0037 J	***0.0037 J***	***0.0031 J***	***0.0031 J***

MW-36S			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0047 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

MWR-4S			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.001 J	*0.00500 U*	*0.00500 U*	*0.00500 U*

MW-22S			
09/16	03/17	09/17	03/18
0.0272	**0.00820**	**0.0101**	**0.00840**
0.107	***0.122***	***0.113***	***0.155***

MW-23S			
09/16	03/17	09/17	03/18
0.0044 J	0.00500 U	0.00500 U	0.00500 U
0.0206	***0.0211***	***0.0228***	***0.0192***

MW-35S			
09/16	03/17	09/17	03/18
0.0027 J	0.00500 U	0.00500 U	0.00500 U
0.0192	***0.0212***	***0.0218***	***0.0199***

MW-17S			
09/16	03/17	09/17	03/18
0.0025 J	0.00500 U	0.00500 U	0.00500 U
0.0200	***0.0252***	***0.0192***	***0.0179***

MW13-15SL			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0052	***0.0164***	***0.0147***	***0.0165***

MW13-13S			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0047 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

MW-37S			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0343	*0.00500 U*	***0.0500***	***0.00930***

MW-3S			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0047 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

MW13-14SL			
09/16	03/17	09/17	03/18
0.0091	**0.0135**	**0.0134**	**0.00520**
0.0676	***0.0972***	***0.110***	***0.0289***

MW15-19SL			
12/16	03/17	09/17	03/18
0.00500 U	0.00500 U	0.00500 U	0.00500 U
0.00500 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

MW13-16S			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0047 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

MW13-11S			
09/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0047 U	*0.00500 U*	*0.00500 U*	*0.00500 U*

MW-39S			
04/15	03/16	03/17	03/18
0.0023 J	**0.0044 J**	0.00500 U	0.00500 U
0.0096 J	***0.0089***	***0.0100***	***0.00890***

MW13-02S			
09/16	03/17	09/17	03/18
0.0400	**0.00560**	**0.00630**	0.00500 U
0.0421	***0.0523***	***0.0526***	***0.0665***

MW13-08S			
09/16	03/17	09/17	03/18
0.118	**0.0447**	**0.0234**	**0.0279**
0.559	***0.784***	***0.753***	***0.685***

MW13-01S			
09/16	03/17	09/17	03/18
0.0559	**0.0346**	**0.0646**	**0.0789**
0.281	***0.444***	***0.648***	***0.799***

MW-42S			
04/15	03/16	03/17	03/18
0.0164	**0.0640**	**0.0327**	**0.0486**
0.192	***0.340***	***0.424***	***0.466***

MWR-15S			
04/15	03/16	03/17	03/18
0.136	**0.0695**	**0.0891**	**0.157**
4.28	***0.425***	***4.32***	***4.41***

MW13-06S			
09/16	03/17	09/17	03/18
0.762	**0.0404**	**0.0472**	**0.0909**
1.89	***1.94***	***1.69***	***2.15***

MWR-27S			
03/16	03/17	09/17	03/18
0.708	**0.0890**	**0.142**	**0.156**
6.03	***5.49***	***5.59***	***5.31***

MW15-17SL			
12/16	03/17	09/17	03/18
0.0113	**0.0115**	**0.0131**	**0.0108**
0.206	***0.224***	***0.241***	***0.216***

MW-40S			
04/15	03/16	03/17	03/18
0.0321	**0.0191**	**0.0142**	**0.0183**
0.168	***0.192***	***0.180***	***0.166***

MW-2S			
09/16	03/17	09/17	03/18
0.0008 J	0.00500 U	0.00500 U	0.00500 U
0.0046 J	***0.00630***	*0.00500 U*	***0.00760***

MW-41S			
04/15	03/16	03/17	03/18
0.0625	**0.0565 J**	**0.00810**	**0.0226**
0.378	***0.508***	***0.442***	***0.372***

MW-38S			
04/15	03/16	03/17	03/18
0.0417	**0.0168**	**0.00530**	**0.0106**
0.643	***0.250***	***0.130***	***0.397***

MW-26S			
04/15	03/16	03/17	03/18
0.0172	**0.0159**	**0.00830**	**0.00880**
0.118	***0.136***	***0.117***	***0.102***

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
0.825	SCREENING LEVEL EXCEEDANCE: WAD CYANIDE ARAR 0.77 mg/L
--	NOT SAMPLED

MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.

** **CONCENTRATIONS OF WAD CYANIDE AT MWR-27S DOES NOT EXCEED THE RCRA POST-CLOSURE CARE PERMIT GROUNDWATER PROTECTION STANDARD.**

DRAWN BY: BRJ CHECKED BY:

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CYANIDE CONCENTRATIONS IN
S & S_L ZONES
(FOUR MOST RECENT EVENTS)

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 15

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_11-15-19-22-25-28 Cyanide Concentrations in P-S-SL-A-B Zones.dwg – Fig 15 S & SL Zones – May. 17, 2018 7:23am – brian.johnson

LEGEND

- MONITORING WELL - S & S_L ZONES
- 03/18 MONTH/YEAR OF SAMPLING EVENT
- 0.0024 FLUORIDE CONCENTRATION (mg/L)

MW13-16S			
09/16	03/17	09/17	03/18
0.41	**0.426**	**0.423**	**0.472**

MW13-11S			
09/16	03/17	09/17	03/18
0.48	**0.485**	**0.459**	**0.499**

MW-39S			
04/15	03/16	03/17	03/18
0.56	**0.57**	**0.508**	**0.523**

MW13-02S			
09/16	03/17	09/17	03/18
0.59	**0.602**	**0.693**	**0.630**

MW-22S			
09/16	03/17	09/17	03/18
0.42	**0.427**	**0.496**	**0.471**

MW-40S			
04/15	03/16	03/17	03/18
0.53	**0.51**	**0.537**	**0.553**

MW-36S			
09/16	03/17	09/17	03/18
0.14 J	**0.180**	**0.136**	**0.189**

MW13-13S			
09/16	03/17	09/17	03/18
0.49	**0.537**	**0.494**	**0.499**

MW13-08S			
09/16	03/17	09/17	03/18
0.30	**0.227**	**0.223**	**0.416**

MW-2S			
09/16	03/17	09/17	03/18
0.12 J	**0.143**	**0.151**	**0.132**

MWR-4S			
09/16	03/17	09/17	03/18
0.13 J	**0.230**	**0.160**	**0.158**

MW-23S			
09/16	03/17	09/17	03/18
0.22	**0.235**	**0.251**	**0.268**

MW13-01S			
09/16	03/17	09/17	03/18
0.68	**0.691**	**0.804**	**0.759**

MW-42S			
04/15	03/16	03/17	03/18
0.76	**0.86**	**0.868**	**0.847**

MW-41S			
04/15	03/16	03/17	03/18
0.30	**0.41**	**0.324**	**0.379**

MW-35S			
09/16	03/17	09/17	03/18
0.55	**0.532**	**0.594**	**0.577**

MW-37S			
09/16	03/17	09/17	03/18
3.88	**3.55**	**4.12**	**3.08**

MW-17S			
09/16	03/17	09/17	03/18
0.31	**0.265**	**0.375**	**0.336**

MW-3S			
09/16	03/17	09/17	03/18
0.24	**0.286**	**0.284**	**0.307**

MWR-15S			
04/15	03/16	03/17	03/18
0.81	**0.96**	**0.956**	**0.906**

MW-38S			
04/15	03/16	03/17	03/18
3.6	**4.13**	**4.73**	**5.34**

MW13-06S			
09/16	03/17	09/17	03/18
1.69	**1.64**	**1.63**	**2.39**

MW-2			
08/14	10/14	01/15	04/15
0.4 J	**0.47**	**0.44**	**0.31**

MWR-29S			
12/16	03/17	09/17	03/18
3.75	**2.07**	**1.43**	**1.71**

MWR-27S			
03/16	03/17	09/17	03/18
0.41	**0.329**	**0.409**	**0.363**

MW-26S			
04/15	03/16	03/17	03/18
0.31	**0.41**	**0.340**	**0.385**

MW-1			
08/14	10/14	01/15	04/15
0.58	**0.58**	**0.57**	**0.55**

MW-29S				
03/16	09/16	12/16	03/17	
2.05	**2.02**	**2.11**	**2.04**	

MW13-15SL			
09/16	03/17	09/17	03/18
2.16	**3.65**	**3.34**	**4.63**

MW-5			
09/16	03/17	09/17	03/18
0.44	**0.485**	**0.529**	**0.504**

MW-3			
08/14	10/14	01/15	04/15
1.6	**1.3**	**2.13**	**1.6**

MW13-14SL			
09/16	03/17	09/17	03/18
19.1	**40.5**	**26.1**	**20.0**

MW15-17SL			
12/16	03/17	09/17	03/18
1.00 U	**0.644**	**0.823**	**0.826**

MW-4L			
08/14	10/14	01/15	04/15
0.9 J	**0.7 J**	**0.88**	**0.7 J**

MW-4U			
08/14	10/14	01/15	04/15
1.0 U	1.0 U	**0.26 J**	1.0 U

MW15-19SL			
12/16	03/17	09/17	03/18
5.06	**4.60**	**4.83**	**4.49**

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
9.8	SCREENING LEVEL EXCEEDANCE: FLUORIDE ACL 9.7 mg/L
--	NOT SAMPLED

- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**

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FLUORIDE CONCENTATIONS IN
S & S_L ZONES
(FOUR MOST RECENT EVENTS)

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 16

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_12-16-20-23-26-29 Fluoride Concentrations in P-S-SL-A Zones.dwg – Fig 16 S & SL Zones – May. 02, 2018 11:51am – brian.johnson

LEGEND

- MONITORING WELL - S & S_L ZONES
- 03/18 MONTH/YEAR OF SAMPLING EVENT
- 0.0024 SULFATE CONCENTRATION (mg/L)

MW13-16S			
09/16	03/17	09/17	03/18
54.0	**69.7**	**70.6**	**68.0**

MW13-11S			
09/16	03/17	09/17	03/18
45.1	**46.2**	**49.5**	**47.9**

MW-39S			
04/15	03/16	03/17	03/18
7.51	**8.92**	**8.28**	**8.73**

MW13-02S			
09/16	03/17	09/17	03/18
14.1	**13.9**	**14.5**	**14.9**

MW-22S			
09/16	03/17	09/17	03/18
45.4	**51.2**	**42.7**	**53.1**

MW-36S			
09/16	03/17	09/17	03/18
70.3	**88.1**	**58.8**	**82.7**

MW13-13S			
09/16	03/17	09/17	03/18
41.9	**43.5**	**44.5**	**37.4**

MW-40S			
04/15	03/16	03/17	03/18
8.11	**8.19**	**8.51**	**8.10**

MW13-08S			
09/16	03/17	09/17	03/18
283	**355**	**398**	**382**

MW-2S			
09/16	03/17	09/17	03/18
25.0	**23.4**	**25.3**	**21.1**

MWR-4S			
09/16	03/17	09/17	03/18
51.1	**58.6**	**77.5**	**72.4**

MW-23S			
09/16	03/17	09/17	03/18
24.8	**24.4**	**22.9**	**22.7**

MW13-01S			
09/16	03/17	09/17	03/18
15.8	**20.8**	**31.5**	**41.5**

MW-42S			
04/15	03/16	03/17	03/18
4.70	**5.38**	**6.39**	**7.85**

MW-41S			
04/15	03/16	03/17	03/18
65.9	**68.5**	**83.3**	**67.1**

MW-35S			
09/16	03/17	09/17	03/18
104	**96.6**	**38.2**	**91.4**

MW-37S			
09/16	03/17	09/17	03/18
23.7	**6.31**	**23.3**	**14.7**

MW-17S			
09/16	03/17	09/17	03/18
37.0	**31.7**	**43.5**	**30.1**

MW-3S			
09/16	03/17	09/17	03/18
29.8	**29.0**	**30.8**	**30.0**

MWR-15S			
04/15	03/16	03/17	03/18
115	**120**	**127**	**124**

MW-38S			
04/15	03/16	03/17	03/18
40.1	**20.3**	**16.3**	**18.5**

MW13-06S			
09/16	03/17	09/17	03/18
268	**258**	**270**	**331**

MW-2			
08/14	10/14	01/15	04/15
75.9	**72.0**	**69.0**	**61.6**

MWR-29S			
12/16	03/17	09/17	03/18
398	**411**	**648**	**595**

MWR-27S			
03/16	03/17	09/17	03/18
77.2	**79.0**	**90.9**	**91.5**

MW-26S			
04/15	03/16	03/17	03/18
26.9	**29.4**	**30.7**	**30.0**

MW-1			
08/14	10/14	01/15	04/15
51.2	**52.5**	**46.4**	**47.6**

MW-29S			
03/16	09/16	12/16	03/17
884	**1380**	**1260**	**814**

MW13-15SL			
09/16	03/17	09/17	03/18
1090	**1240**	**1200**	**1330**

MW-5			
09/16	03/17	09/17	03/18
42.5	**42.1**	**47.2**	**45.0**

MW-3			
08/14	10/14	01/15	04/15
630	**567**	**298**	**384**

MW13-14SL			
09/16	03/17	09/17	03/18
386	**244**	**418**	**196**

MW15-17SL			
12/16	03/17	09/17	03/18
160	**166**	**177**	**164**

MW-4L			
08/14	10/14	01/15	04/15
952	**1060**	**779**	**804**

MW-4U			
08/14	10/14	01/15	04/15
727	**724**	**564**	**762**

MW15-19SL			
12/16	03/17	09/17	03/18
104	**102**	**102**	**101**

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
4,000	SCREENING LEVEL EXCEEDANCE: SULFATE ACL 3,020 mg/L
--	NOT SAMPLED

- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**

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wood.

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SULFATE CONCENTATIONS IN
S & S_L ZONES
(FOUR MOST RECENT EVENTS)

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 17

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_13-17-21-24-27-30 Sulfate Concentrations in P-S-SL-A Zones.dwg – Fig 17 S & SL Zones – May. 02, 2018 12:14pm – brian.johnson

LEGEND

MONITORING WELL - S & S_L ZONES

03/16 MONTH/YEAR OF SAMPLING EVENT

0.0024 PAH CONCENTRATION (µg/L)

	PAH Compound
Baa	Benzo(a)anthracene
Bap	Benzo(a)pyrene
Bpf	Benzo(b)fluoranthene
Bkf	Benzo(k)fluoranthene
C	Chrysene
D	Dibenzo(a,h)anthracene
I	Indeno(1,2,3-cd)pyrene

MW-1

	08/14	10/14	01/15	04/15
Baa	**0.0031 B**	0.019 U	0.020 U	**0.0034 J**
Bap	0.020 U	0.019 U	0.020 U	0.019 U
Bbf	0.020 U	0.019 U	0.020 U	0.019 U
Bkf	0.020 U	0.019 U	0.020 U	0.019 U
C	0.020 U	0.019 U	0.020 U	0.019 U
D	0.020 U	0.019 U	0.020 U	0.019 U
I	0.020 U	0.019 U	0.020 U	0.019 U

MW-2

	08/14	10/14	01/15	04/15
Baa	**0.0039 B**	**0.0029 J**	0.020 U	**0.0035 J**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	**0.0025 B**	0.020 U	0.020 U	0.020 U
I	**0.0031 B**	0.020 U	0.020 U	0.020 U

MW-3

	08/14	10/14	01/15	04/15
Baa	**0.0051 B**	**0.0032 J**	0.020 U	**0.0044 J**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	0.020 U	0.020 U	**0.0053 J**	0.020 U
I	0.020 U	0.020 U	**0.0063 J**	0.020 U

MW-4L

	08/14	10/14	01/15	04/15
Baa	**0.0056 B**	0.020 U	0.020 U	**0.0050 J**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	0.020 U	0.020 U	0.020 U	0.020 U
I	**0.0035 B**	0.020 U	0.020 U	0.020 U

MW-4U

	08/14	10/14	01/15	04/15
Baa	**0.0043 B**	**0.0030 J**	0.019 U	**0.0041 J**
Bap	0.020 U	0.020 U	0.019 U	0.020 U
Bbf	0.020 U	0.020 U	0.019 U	0.020 U
Bkf	0.020 U	0.020 U	0.019 U	0.020 U
C	0.020 U	0.020 U	0.019 U	0.020 U
D	0.020 U	0.020 U	0.019 U	0.020 U
I	0.020 U	0.020 U	0.019 U	0.020 U

MW-5

	08/14	10/14	01/15	04/15
Baa	**0.0030 B**	0.020 U	**0.0029 B**	**0.0047 J**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	0.020 U	0.020 U	0.020 U	0.020 U
I	0.020 U	0.020 U	0.020 U	0.020 U

MW-29S

	10/14	01/15	04/15	03/16
Baa	**0.0077 J**	0.020 U	**0.0043 J**	**0.018 J**
Bap	**0.0063 J**	0.020 U	0.020 U	**0.017 J**
Bbf	**0.010 J**	0.020 U	0.020 U	**0.034**
Bkf	**0.0031 J**	0.020 U	0.020 U	**0.012 J**
C	**0.0052 J**	0.020 U	0.020 U	**0.023**
D	0.020 U	0.020 U	0.020 U	**0.0033 J**
I	**0.0059 J**	0.020 U	0.020 U	**0.015 J**

MWR-29S

	–	–	--	03/16
Baa	–	–	--	0.0039 U
Bap	–	–	--	0.020 U
Bbf	–	–	--	0.020 U
Bkf	–	–	--	0.020 U
C	–	–	--	0.020 U
D	–	–	--	0.020 U
I	–	–	--	0.020 U

MW-36S

	07/14	10/14	01/15	04/15
Baa	**0.0031 B**	**0.0028 J**	**0.0033 B**	**0.0027 J**
Bap	0.020 U	0.020 U	0.019 U	0.020 U
Bbf	0.020 U	0.020 U	0.019 U	0.020 U
Bkf	0.020 U	0.020 U	0.019 U	0.020 U
C	0.020 U	0.020 U	0.019 U	0.020 U
D	**0.0058 J**	0.020 U	0.019 U	0.020 U
I	**0.0050 J**	0.020 U	0.019 U	0.020 U

MWR-4S

	08/14	10/14	01/15	04/15
Baa	**0.0039 B**	**0.014 J**	**0.0037 B**	**0.0053 J**
Bap	0.020 U	**0.017 J**	0.020 U	0.020 U
Bbf	0.020 U	**0.027**	0.020 U	0.020 U
Bkf	0.020 U	**0.010 J**	0.020 U	0.020 U
C	0.020 U	**0.015 J**	0.020 U	0.020 U
D	0.020 U	**0.0039 J**	0.020 U	0.020 U
I	**0.0040 J**	**0.017 J**	0.020 U	0.020 U

MW-17S

	07/14	10/14	01/15	04/15
Baa	**0.0054 B**	**0.0030 J**	0.020 U	**0.0058 B**
Bap	0.020 U	0.020 U	0.020 U	0.019 U
Bbf	**0.0055 J**	0.020 U	0.020 U	**0.0066 J**
Bkf	0.020 U	0.020 U	0.020 U	**0.0031 J**
C	**0.0043 J**	0.020 U	0.020 U	**0.0052 J**
D	0.020 U	0.020 U	0.020 U	0.019 U
I	**0.0031 J**	0.020 U	0.020 U	**0.0030 J**

MW13-15SL

	07/14	10/14	01/15	04/15
Baa	**0.0043 J**	**0.0057 J**	**0.0055 B**	**0.0048 B**
Bap	**0.0050 J**	**0.0054 J**	**0.0084 J**	0.019 U
Bbf	0.020 U	0.020 U	0.020 U	0.019 U
Bkf	0.020 U	0.020 U	0.020 U	0.019 U
C	0.020 U	0.020 U	**0.0053 J**	0.019 U
D	0.020 U	0.020 U	0.020 U	0.019 U
I	0.020 U	0.020 U	**0.0030 J**	0.019 U

MW15-19SL

	03/16	06/16	09/16	12/16
Baa	0.010 U	0.020 U	**0.0064 J**	0.0388 U
Bap	0.020 U	0.020 U	**0.0060 J**	0.0388 U
Bbf	0.020 U	0.020 U	0.020 U	0.0388 U
Bkf	0.020 U	0.020 U	0.020 U	0.0388 U
C	**0.023**	**0.014 J**	**0.0040 J**	0.0388 U
D	0.020 U	0.020 UJ	0.020 U	0.0388 U
I	0.020 U	0.020 U	0.020 U	0.0388 U

MW-22S

	07/14	10/14	01/15	04/15
Baa	**0.0045 J**	**0.0035 J**	**0.0069 B**	**0.0032 J**
Bap	0.020 U	0.020 U	**0.0059 J**	0.020 U
Bbf	0.020 U	0.020 U	**0.0072 J**	0.020 U
Bkf	0.020 U	0.020 U	0.019 U	0.020 U
C	0.020 U	0.020 U	**0.0054 J**	0.020 U
D	0.020 U	0.020 U	0.019 U	0.020 U
I	**0.0027 J**	0.020 U	**0.0056 J**	0.020 U

MW-23S

	07/14	10/14	01/15	04/15
Baa	**0.0033 B**	0.019 U	0.020 U	**0.0040 J**
Bap	0.020 U	0.019 U	0.020 U	0.020 U
Bbf	0.020 U	0.019 U	0.020 U	0.020 U
Bkf	0.020 U	0.019 U	0.020 U	0.020 U
C	0.020 U	0.019 U	0.020 U	0.020 U
D	0.020 U	0.019 U	0.020 U	0.020 U
I	0.020 U	0.019 U	0.020 U	0.020 U

MW-35S

	07/14	10/14	01/15	04/15
Baa	**0.017 J**	**0.011 J**	**0.016 B**	**0.014 J**
Bap	0.020 U	0.020 U	0.019 U	0.022 U
Bbf	**0.0049 J**	0.020 U	0.019 U	**0.0094 J**
Bkf	0.020 U	0.020 U	0.019 U	**0.0035 J**
C	**0.039**	**0.010 J**	0.019 U	**0.038**
D	0.020 U	0.020 U	0.019 U	0.022 U
I	0.020 U	0.020 U	0.019 U	0.022 U

MW13-13S

	07/14	10/14	01/15	04/15
Baa	**0.0066 B**	**0.0033 J**	**0.0096 B**	**0.0058 B**
Bap	**0.0049 J**	0.020 U	**0.0067 J**	0.020 U
Bbf	**0.0070 J**	0.020 U	**0.0083 J**	**0.0055 J**
Bkf	0.020 U	0.020 U	**0.0050 J**	0.020 U
C	**0.0036 J**	0.020 U	**0.0079 J**	**0.0039 J**
D	0.020 U	0.020 U	0.019 U	0.020 U
I	**0.0079 B**	0.020 U	**0.0058 J**	0.020 U

MW-37S

	07/14	10/14	01/15	04/15
Baa	**0.0033 J**	**0.012 J**	0.020 U	**0.0036 J**
Bap	0.020 U	**0.0098 J**	0.020 U	0.020 U
Bbf	0.020 U	**0.020**	0.020 U	0.020 U
Bkf	0.020 U	**0.0065 J**	0.020 U	0.020 U
C	0.020 U	**0.014 J**	0.020 U	0.020 U
D	0.020 U	**0.0026 J**	0.020 U	0.020 U
I	0.020 U	**0.013 J**	0.020 U	0.020 U

MW-3S

	07/14	10/14	01/15	04/15
Baa	**0.018 J**	**0.0099 J**	**0.0030 B**	**0.011 B**
Bap	**0.020 J**	**0.0086 J**	0.020 U	**0.0089 J**
Bbf	**0.037**	**0.018 J**	**0.0051 J**	**0.017 J**
Bkf	**0.013 J**	**0.0052 J**	0.020 U	**0.0077 J**
C	**0.025**	**0.015 J**	**0.0042 J**	**0.013 J**
D	**0.0027 J**	0.019 U	0.020 U	0.019 U
I	**0.019 J**	**0.011 J**	**0.0035 J**	**0.0071 J**

MWR-27S

	07/14	10/14	01/15	04/15
Baa	**0.011 B**	**0.0045 J**	**0.010 B**	**0.0086 B**
Bap	**0.012 J**	0.020 U	**0.0050 J**	0.019 U
Bbf	**0.015 J**	0.020 U	**0.0067 J**	**0.0056 J**
Bkf	**0.0052 J**	0.020 U	**0.0030 J**	0.019 U
C	**0.0098 J**	0.020 U	**0.0044 J**	**0.0049 J**
D	0.019 U	0.020 U	0.020 U	0.019 U
I	**0.0083 J**	0.020 U	**0.0050 J**	**0.0031 J**

MW13-14SL

	07/14	10/14	01/15	04/15
Baa	**0.0082 J**	**0.0096 J**	**0.017 J**	**0.0095 B**
Bap	0.020 U	0.020 U	**0.0097 J**	0.020 U
Bbf	**0.0080 J**	**0.0055 J**	**0.026**	**0.0043 J**
Bkf	**0.0070 J**	0.020 U	**0.0095 J**	0.020 U
C	0.020 U	0.020 U	0.020 UJ	0.020 U
D	0.020 U	0.020 U	**0.0083 J**	0.020 U
I	**0.0055 J**	**0.0040 J**	**0.033**	**0.0038 J**

MW13-11S

	07/14	10/14	01/15	04/15
Baa	**0.0038 B**	**0.0027 J**	**0.0034 B**	**0.0091 B**
Bap	0.020 U	0.020 U	0.020 U	**0.0067 J**
Bbf	0.020 U	0.020 U	0.020 U	**0.011 J**
Bkf	0.020 U	0.020 U	0.020 U	**0.0037 J**
C	0.020 U	0.020 U	0.020 U	**0.0064 J**
D	0.020 U	0.020 U	0.020 U	0.020 U
I	0.020 U	0.020 U	0.020 U	**0.0053 J**

MW13-01S

	08/14	10/14	01/15	04/15
Baa	**0.0053 B**	0.020 U	0.020 U	**0.0075 J**
Bap	0.020 U	0.020 U	0.020 U	0.021 U
Bbf	0.020 U	0.020 U	0.020 U	0.021 U
Bkf	0.020 U	0.020 U	0.020 U	0.021 U
C	0.020 U	0.020 U	0.020 U	**0.0048 J**
D	0.020 U	0.020 U	0.020 U	0.021 U
I	0.020 U	0.020 U	0.020 U	0.021 U

MW-42S

	07/14	10/14	01/15	04/15
Baa	**0.0031 B**	0.020 U	0.020 U	**0.0026 B**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	0.020 U	0.020 U	0.020 U	0.020 U
I	0.020 U	0.020 U	0.020 U	0.020 U

MW13-06S

	07/14	10/14	01/15	04/15
Baa	**0.0070 B**	**0.0062 J**	**0.0042 B**	**0.0054 B**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	0.020 U	0.020 U	0.020 U	0.020 U
I	0.020 U	**0.0040 J**	0.020 U	0.020 U

MW15-17SL

	03/16	06/16	09/16	12/16
Baa	0.0040 U	0.020 U	**0.0053 J**	0.0396 U
Bap	0.020 U	0.020 U	0.020 U	0.0396 U
Bbf	0.020 U	0.020 U	0.020 U	0.0396 U
Bkf	0.020 U	0.020 U	0.020 U	0.0396 U
C	0.020 U	0.020 U	0.020 U	0.0396 U
D	0.020 U	0.020 UJ	0.020 U	0.0396 U
I	0.020 U	0.020 U	0.020 U	**0.0225 J**

MW13-16S

	07/14	10/14	01/15	04/15
Baa	**0.0038 B**	**0.023**	**0.0084 B**	**0.0066 B**
Bap	0.020 U	**0.028**	**0.0061 J**	**0.0048 J**
Bbf	0.020 U	**0.046**	**0.0080 J**	**0.0072 J**
Bkf	0.020 U	**0.014 J**	**0.0043 J**	0.020 U
C	0.020 U	**0.034**	**0.0075 J**	**0.0052 J**
D	0.020 U	**0.0091 J**	0.020 U	0.020 U
I	0.020 U	**0.029**	**0.0063 J**	**0.0045 J**

MW13-02S

	08/14	10/14	01/15	04/15
Baa	**0.0051 B**	**0.0031 J**	0.020 U	**0.0033 B**
Bap	**0.0051 J**	0.020 U	0.020 U	0.020 U
Bbf	**0.013 J**	0.020 U	0.020 U	0.020 U
Bkf	**0.0053 J**	0.020 U	0.020 U	0.020 U
C	**0.0057 J**	0.020 U	0.020 U	0.020 U
D	0.020 U	0.020 U	0.020 U	0.020 U
I	**0.016 J**	0.020 U	0.020 U	0.020 U

MW13-08S

	07/14	10/14	01/15	04/15
Baa	**0.0054 B**	**0.0065 J**	0.019 U	**0.0073 B**
Bap	0.020 U	0.020 U	0.019 U	0.020 U
Bbf	0.020 U	**0.0050 J**	0.019 U	0.020 U
Bkf	0.020 U	0.020 U	0.019 U	0.020 U
C	0.020 U	**0.0042 J**	0.019 U	0.020 U
D	0.020 U	0.020 U	0.019 U	0.020 U
I	0.020 U	**0.0039 J**	0.019 U	0.020 U

MWR-15S

	07/14	10/14	01/15	04/15
Baa	**0.0042 JB**	0.020 U	**0.0043 B**	**0.0035 B**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	**0.0038 JB**	0.020 U	0.020 U	0.020 U
I	**0.0047 JB**	0.020 U	0.020 U	0.020 U

MW-39S

	07/14	10/14	01/15	04/15
Baa	**0.0059 B**	**0.0051 B**	**0.0039 B**	**0.0029 B**
Bap	**0.0052 J**	0.020 U	0.019 U	0.020 U
Bbf	**0.0070 J**	**0.0049 J**	0.019 U	0.020 U
Bkf	0.020 U	0.020 U	0.019 U	0.020 U
C	**0.0043 J**	**0.0044 J**	0.019 U	0.020 U
D	0.020 U	0.020 U	0.019 U	0.020 U
I	**0.0049 B**	**0.0037 J**	0.019 U	0.020 U

MW-40S

	07/14	10/14	01/15	04/15
Baa	**0.0040 B**	0.020 U	0.020 U	**0.0029 B**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	0.020 U	0.020 U	0.020 U	0.020 U
Bkf	0.020 U	0.020 U	0.020 U	0.020 U
C	0.020 U	0.020 U	0.020 U	0.020 U
D	**0.0026 B**	0.020 U	0.020 U	0.020 U
I	**0.0038 B**	0.020 U	0.020 U	0.020 U

MW-2S

	07/14	10/14	01/15	04/15
Baa	**0.0039 B**	**0.0043 J**	**0.0030 J**	**0.0038 B**
Bap	0.020 U	0.019 U	0.019 U	0.020 U
Bbf	0.020 U	0.019 U	0.019 U	0.020 U
Bkf	0.020 U	0.019 U	0.019 U	0.020 U
C	0.020 U	0.019 U	0.019 U	0.020 U
D	0.020 U	0.019 U	0.019 U	0.020 U
I	0.020 U	0.019 U	0.019 U	0.020 U

MW-41S

	07/14	10/14	01/15	04/15
Baa	**0.0043 B**	**0.0031 B**	**0.0034 B**	**0.0034 B**
Bap	0.020 U	0.019 U	0.020 U	0.020 U
Bbf	0.020 U	0.019 U	0.020 U	0.020 U
Bkf	0.020 U	0.019 U	0.020 U	0.020 U
C	0.020 U	0.019 U	0.020 U	0.020 U
D	0.020 U	0.019 U	0.020 U	0.020 U
I	0.020 U	0.019 U	0.020 U	0.020 U

MW-38S

	07/14	10/14	01/15	04/15
Baa	**0.0044 B**	**0.0026 B**	0.020 U	**0.0029 B**
Bap	0.020 U	0.020 U	0.020 U	0.020 U
Bbf	**0.0043 B**	0.020 U	0.020 U	0.020 U
Bkf	**0.0035 B**	0.020 U	0.020 U	0.020 U
C	**0.0034 J**	0.020 U	0.020 U	0.020 U
D	**0.0043 B**	0.020 U	0.020 U	0.020 U
I	**0.0053 B**	0.020 U	0.020 U	0.020 U

MW-26S

	07/14	10/14	01/15	04/15
Baa	**0.0049 B**	**0.0042 J**	0.019 U	**0.0028 B**
Bap	**0.0049 B**	0.020 U	0.019 U	0.020 U
Bbf	**0.0043 B**	0.020 U	0.019 U	0.020 U
Bkf	0.020 U	0.020 U	0.019 U	0.020 U
C	0.020 U	0.020 U	0.019 U	0.020 U
D	0.020 U	0.020 U	0.019 U	0.020 U
I	0.020 U	**0.0028 J**	0.019 U	0.020 U

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
µg/L	MICROGRAMS PER LITER
0.250	SCREENING LEVEL EXCEEDANCE: Bap PAH MCL 0.200 µg/L
--	NOT SAMPLED

- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**

DRAWN BY: BRJ CHECKED BY:

LOCKHEED MARTIN CORPORATION

Wood Environment & Infrastructure Solutions, Inc.
7376 S.W. Durham Road
Portland, OR 97224

wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

PAH CONCENTATIONS IN
S & S_L ZONES
(FOUR MOST RECENT EVENTS)

DATE: MAY 2018

SCALE: 1" = 400'

PROJECT NO.: 661M129556

FIGURE: 18

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_14-18 PAH Concentrations in P-S-SL Zones.dwg – Fig 18 S & SL Zones – May. 02, 2018 12:18pm – brian.johnson

LEGEND

- MONITORING WELL - A AQUIFER
- 03/18 — MONTH/YEAR OF SAMPLING EVENT
- 0.0024 — WAD CYANIDE CONCENTRATION (mg/L)
- *0.005* — TOTAL CYANIDE CONCENTRATION (mg/L)

MW-12A

04/15	03/16	03/17	03/18
0.0072	**0.0053**	**0.00550**	**0.00900**
0.0605	***0.0482***	***0.0542***	***0.0541***

MW-13A

04/15	03/16	03/17	03/18
0.0011 J	0.0050 U	0.00500 U	0.00500 U
0.0060	***0.0107 J***	***0.00710***	***0.00970***

MW13-02A

09/16	03/17	09/17	03/18
0.0156	0.00500 U	0.00500 U	0.00500 U
0.0262	***0.0289***	***0.0306***	***0.0200***

MWR-2A

03/16	03/17	09/17	03/18
0.0050 U	0.00500 U	0.00500 U	0.00500 U
0.0358	***0.0294***	***0.0384***	*0.00500 U*

MWR-7A

03/15	03/16	03/17	03/18
0.015 J	**0.0387**	**0.0173**	**0.00790 J**
0.29	***0.360***	***0.323***	***0.277***

MW-6AA

04/15	03/16	03/17	03/18
0.0620 J	**0.0368**	**0.0265**	**0.0282**
0.465	***0.490***	***0.522***	***0.478***

MW13-06A

09/16	03/17	09/17	03/18
0.164	**0.0109**	**0.0603**	**0.0447**
0.803	***0.795***	***0.735***	***0.677***

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
0.625	SCREENING LEVEL EXCEEDANCE: WAD CYANIDE MCL 0.20 mg/L
--	NOT SAMPLED

DRAWN BY: BRJ CHECKED BY:

LOCKHEED MARTIN CORPORATION

Wood Environment & Infrastructure Solutions, Inc.
7376 S.W. Durham Road
Portland, OR 97224

wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

CYANIDE CONCENTRATIONS IN A AQUIFER (FOUR MOST RECENT EVENTS)

DATE: MAY 2018

SCALE: 1" = 400'

PROJECT NO.: 661M129556

FIGURE: 19

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_11-15-19-22-25-28 Cyanide Concentrations in P-S-SL-A-B Zones.dwg — Fig 19 A Aquifer — May. 17, 2018 7:24am — brian.johnson

LEGEND

- MONITORING WELL - A AQUIFER
- 03/18 MONTH/YEAR OF SAMPLING EVENT
- 0.0024 FLUORIDE CONCENTRATION (mg/L)

MW-12A			
04/15	03/16	03/17	03/18
0.57	**0.60**	**0.626**	**0.633**

MW-13A			
04/15	03/16	03/17	03/18
0.50	**0.79**	**0.496**	**0.487**

MW13-02A			
09/16	03/17	09/17	03/18
0.79	**0.934**	**0.774**	**0.890**

MWR-2A			
03/16	03/17	09/17	03/18
0.25	**0.438**	**0.496**	**0.287**

MWR-7A			
03/15	03/16	03/17	03/18
0.79	**1.00**	**0.773**	**0.768**

MW-6AA			
04/15	03/16	03/17	03/18
0.59 J	**0.61**	**0.735**	**0.667**

MW13-06A			
09/16	03/17	09/17	03/18
0.62	**0.822**	**0.612**	**0.551**

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
9.8	SCREENING LEVEL EXCEEDANCE: FLUORIDE MCL 4.0 mg/L
--	NOT SAMPLED

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LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

FLUORIDE CONCENTATIONS IN
A AQUIFER
(FOUR MOST RECENT EVENTS)

DATE: MAY 2018

SCALE: 1" = 400'

PROJECT NO.: 661M129556

FIGURE: 20

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_12-16-20-23-26-29 Fluoride Concentrations in P-S-SL-A Zones.dwg – Fig 20 A Aquifer – May. 02, 2018 11:52am – brian.johnson

LEGEND

- MONITORING WELL - A AQUIFER
- 03/18 MONTH/YEAR OF SAMPLING EVENT
- 0.0024 SULFATE CONCENTRATION (mg/L)

MW-12A			
04/15	03/16	03/17	03/18
35.7	**83.8**	**55.5**	**53.1**

MW-13A			
04/15	03/16	03/17	03/18
8.38	**12.7**	**13.2**	**11.7**

MW13-02A			
09/16	03/17	09/17	03/18
12.8	**12.1**	**13.4**	**10.9**

MWR-2A			
03/16	03/17	09/17	03/18
10.5	**17.7**	**19.8**	**11.4**

MWR-7A			
03/15	03/16	03/17	03/18
19	**19.5**	**20.0**	**20.3**

MW-6AA			
04/15	03/16	03/17	03/18
33.7	**34.5**	**38.4**	**39.7**

MW13-06A			
09/16	03/17	09/17	03/18
72.5	**60.5**	**68.2**	**61.5**

N

0' 200' 400' 600'

1" = 400'

NOTE:

U	NOT DETECTED AT THE REPORTING LIMIT
J	ESTIMATED VALUE
UJ	NOT DETECTED AT OR ABOVE THE STATED LEVEL, WHICH IS AN APPROXIMATE VALUE
B	BLANK CONTAMINATION
mg/L	MILLIGRAMS PER LITER
4,000	SCREENING LEVEL EXCEEDANCE: SULFATE SMCL 250 mg/L
--	NOT SAMPLED

DRAWN BY: BRJ CHECKED BY:

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Portland, OR 97224

wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

SULFATE CONCENTATIONS IN A AQUIFER (FOUR MOST RECENT EVENTS)

DATE: MAY 2018

SCALE: 1" = 400'

PROJECT NO.: 661M129556

FIGURE: 21

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_13-17-21-24-27-30 Sulfate Concentrations in P-S-SL-A Zones.dwg – Fig 21 A Aquifer – May. 02, 2018 12:14pm – brian.johnson

LEGEND

- MONITORING WELL - PERCHED ZONE
- WAD CYANIDE DETECTED ABOVE COMPARISON LEVEL OF 0.77 mg/L
- WAD CYANIDE DETECTED BELOW COMPARISON LEVEL OF 0.77 mg/L
- WAD CYANIDE NOT DETECTED

MW13-16P
MW13-11P
MW13-10P
MW13-03P
P-5
P-6
PZ-03
MW13-02P
P-3
WEST DWT
P-2
P-1
EAST DWT
MW13-09P
PZ-02
MW13-08P
MW15-18P
MW13-13P
PZ-01
MW-5S
MW13-07P
MW13-01P
MW13-04P
MW13-05P
MW15-20P
MW13-06P
MW13-12P

0' 200' 400' 600'
1" = 400'

DRAWN BY: BRJ CHECKED BY:

	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018 SCALE: 1" = 400'
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		WAD CYANIDE DOT MAP IN PERCHED ZONE MARCH 2018	PROJECT NO.: 661M129556 FIGURE: 22

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_11-15-19-22-25-28 Cyanide Concentrations in P-S-SL-A-B Zones.dwg - Fig 22 DOT Perched Zone - May. 17, 2018 7:25am - brian.johnson

LEGEND

- MONITORING WELL - PERCHED ZONE
- FLUORIDE DETECTED ABOVE COMPARISON LEVEL OF 9.7 mg/L
- FLUORIDE DETECTED BELOW COMPARISON LEVEL OF 9.7 mg/L
- FLUORIDE NOT DETECTED

MW13-16P
MW13-11P
MW13-10P
MW13-03P
P-5
P-6
PZ-03
MW13-02P
P-3
WEST DWT
P-2
P-1
EAST DWT
MW13-09P
PZ-02
MW13-08P
MW15-18P
MW13-13P
PZ-01
MW-5S
MW13-07P
MW13-01P
MW13-04P
MW13-05P
MW15-20P
MW13-06P
MW13-12P

0' 200' 400' 600'
1" = 400'

DRAWN BY: BRJ CHECKED BY:	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		FLUORIDE DOT MAP IN PERCHED ZONE MARCH 2018	SCALE: 1" = 400' PROJECT NO.: 661M129556 FIGURE: 23

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_12-16-20-23-26-29 Fluoride Concentrations in P-S-SL-A Zones.dwg – Fig 23 DOT Perched Zone – May. 17, 2018 7:29am – brian.johnson

LEGEND

- MONITORING WELL - PERCHED ZONE
- SULFATE DETECTED ABOVE COMPARISON LEVEL OF 3,020 mg/L
- SULFATE DETECTED BELOW COMPARISON LEVEL OF 3,020 mg/L
- SULFATE NOT DETECTED

MW13-16P
MW13-11P
MW13-10P
MW13-03P
P-5
P-6
PZ-03
MW13-02P
P-3
WEST DWT
P-2
P-1
EAST DWT
MW13-09P
PZ-02
MW13-08P
MW15-18P
MW13-13P
PZ-01
MW-5S
MW13-07P
MW13-01P
MW13-04P
MW13-05P
MW15-20P
MW13-06P
MW13-12P

0' 200' 400' 600'
1" = 400'

DRAWN BY: BRJ CHECKED BY:

	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		SULFATE DOT MAP IN PERCHED ZONE MARCH 2018	SCALE: 1" = 400' PROJECT NO.: 661M129556 FIGURE: 24

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_13-17-21-24-27-30 Sulfate Concentrations in P-S-SL-A Zones.dwg – Fig 24 DOT Perched Zone – May. 17, 2018 7:32am – brian.johnson

LEGEND

- MONITORING WELL - S & S_L ZONES
- WAD CYANIDE DETECTED ABOVE ARAR OF 0.77 mg/L
- WAD CYANIDE DETECTED BELOW ARAR OF 0.77 mg/L
- WAD CYANIDE NOT DETECTED

MW13-16S
MW13-11S
MW-39S
MW13-02S
MW-40S
MW13-08S
MW-2S
MW-22S
MW13-13S
MW-36S
MWR-4S
MW-23S
MW-35S
MW-17S
MW-37S
MW-3S
MW13-01S
MW-42S
MW-41S
MW-38S
MWR-15S
MWR-27S
MW13-06S
MW-26S
MW-1
MW-2
MWR-29S
MW-29S
MW13-14SL
MW13-15SL
MW-3
MW-5
MW-4L
MW-4U
MW15-19P
MW15-17SL

0' 200' 400' 600'
1" = 400'

- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**

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THE DALLES, OREGON

WAD CYANIDE DOT MAP IN
S & S_L ZONES
MARCH 2018

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 25

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_11-15-19-22-25-28 Cyanide Concentrations in P-S-SL-A-B Zones.dwg – Fig 25 DOT S & SL Zones – May. 17, 2018 7:25am – brian.johnson

LEGEND

- MONITORING WELL - S & S_L ZONES
- FLUORIDE DETECTED ABOVE ACL OF 9.7 mg/L
- FLUORIDE DETECTED BELOW ACL OF 9.7 mg/L
- FLUORIDE NOT DETECTED

MW13-16S
MW13-11S
MW-39S
MW13-02S
MW-40S
MW13-08S
MW-2S
MW-22S
MW13-13S
MW-36S
MWR-4S
MW-23S
MW-35S
MW-17S
MW-37S
MW-3S
MW13-01S
MW-42S
MW-41S
MW-38S
MWR-15S
MW13-06S
MWR-27S
MW-26S
MW-1
MW-2
MWR-29S
MW-29S
MW13-14SL
MW13-15SL
MW-3
MW-5
MW-4L
MW-4U
MW15-19P
MW15-17SL

0' 200' 400' 600'
1" = 400'

- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**

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LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

FLUORIDE DOT MAP IN
S & S_L ZONES
MARCH 2018

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 26

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_12-16-20-23-26-29 Fluoride Concentrations in P-S-SL-A Zones.dwg – Fig 26 DOT S & SL Zones – May. 02, 2018 11:52am – brian.johnson

LEGEND

- MONITORING WELL - S & S_L ZONES
- SULFATE DETECTED ABOVE ACL OF 3,020 mg/L
- SULFATE DETECTED BELOW ACL OF 3,020 mg/L
- SULFATE NOT DETECTED

MW13-16S
MW13-11S
MW-39S
MW13-02S
MW-40S
MW13-08S
MW-2S
MW-22S
MW13-13S
MW-36S
MWR-4S
MW-23S
MW-35S
MW-17S
MW-37S
MW-3S
MW13-01S
MW-42S
MW-41S
MW-38S
MWR-15S
MW13-06S
MWR-27S
MW-26S
MW-1
MW-2
MWR-29S
MW-29S
MW13-14SL
MW13-15SL
MW-3
MW-5
MW-4L
MW-4U
MW15-19P
MW15-17SL

0' 200' 400' 600'
1" = 400'

- **MW-37S IS BEING REEVALUATED TO BE COMPLETED IN THE PERCHED ZONE BECAUSE ITS SCREEN DEPTH OF 22-FEET IS ABOVE THE BYRON INTERBED INTERPRETED TO BE A DEPTH OF 25-FEET.**

DRAWN BY: BRJ CHECKED BY::

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Portland, OR 97224

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LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

SULFATE DOT MAP IN
S & S_L ZONES
MARCH 2018

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 27

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_13-17-21-24-27-30 Sulfate Concentrations in P-S-SL-A Zones.dwg – Fig 27 S & SL Zones – May. 02, 2018 12:15pm – brian.johnson

LEGEND

- MONITORING WELL - A AQUIFER
- WAD CYANIDE DETECTED ABOVE MCL OF 0.20 mg/L
- WAD CYANIDE DETECTED BELOW MCL OF 0.20 mg/L
- WAD CYANIDE NOT DETECTED

MW-12A
MW-13A
MW13-02A
MWR-2A
MWR-7A
MW-6AA
MW13-06A

N

0' 200' 400' 600'

1" = 400'

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Wood Environment &
Infrastructure Solutions, Inc.
7376 S.W. Durham Road
Portland, OR 97224

wood.

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

WAD CYANIDE DOT MAP IN
A AQUIFER
MARCH 2018

DATE: MAY 2018
SCALE: 1" = 400'
PROJECT NO.: 661M129556
FIGURE: 28

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_11-15-19-22-25-28 Cyanide Concentrations in P-S-SL-A-B Zones.dwg – Fig 28 DOT A Aquifer – May. 17, 2018 7:25am – brian.johnson

LEGEND

- MONITORING WELL - A AQUIFER
- FLUORIDE DETECTED ABOVE MCL OF 4.0 mg/L
- FLUORIDE DETECTED BELOW MCL OF 4.0 mg/L
- FLUORIDE NOT DETECTED

MW-12A
MW-13A
MW13-02A
MWR-2A
MWR-7A
MW-6AA
MW13-06A

N

0' 200' 400' 600'

1" = 400'

	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		FLUORIDE DOT MAP IN A AQUIFER MARCH 2018	SCALE: 1" = 400' PROJECT NO.: 661M129556 FIGURE: 29

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_12-16-20-23-26-29 Fluoride Concentrations in P-S-SL-A Zones.dwg – Fig 29 DOT A Aquifer – May. 02, 2018 11:53am – brian.johnson

LEGEND

- MONITORING WELL - A AQUIFER
- SULFATE DETECTED ABOVE SMCL OF 250 mg/L
- SULFATE DETECTED BELOW SMCL OF 250 mg/L
- SULFATE NOT DETECTED

MW-12A
MW-13A
MW13-02A
MWR-2A
MWR-7A
MW-6AA
MW13-06A

0' 200' 400' 600'
1" = 400'

	LOCKHEED MARTIN CORPORATION	wood.	LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	DATE: MAY 2018 SCALE: 1" = 400' PROJECT NO.: 661M129556 FIGURE: 30
	Wood Environment & Infrastructure Solutions, Inc. 7376 S.W. Durham Road Portland, OR 97224		SULFATE DOT MAP IN A AQUIFER MARCH 2018	

DRAWN BY: BRJ CHECKED BY:

\\POR-FS1\ClientData\Lockheed Martin\Projects\661M129556_OMM_GWMR\DWG\2018_Annual\Figures_13-17-21-24-27-30 Sulfate Concentrations in P-S-SL-A Zones.dwg – Fig 30 A Aquifer – May. 02, 2018 12:15pm – brian.johnson

CHARTS

CHART 1
RCRA Leachate Production
Lockheed Martin Corporation Site, The Dalles, Oregon

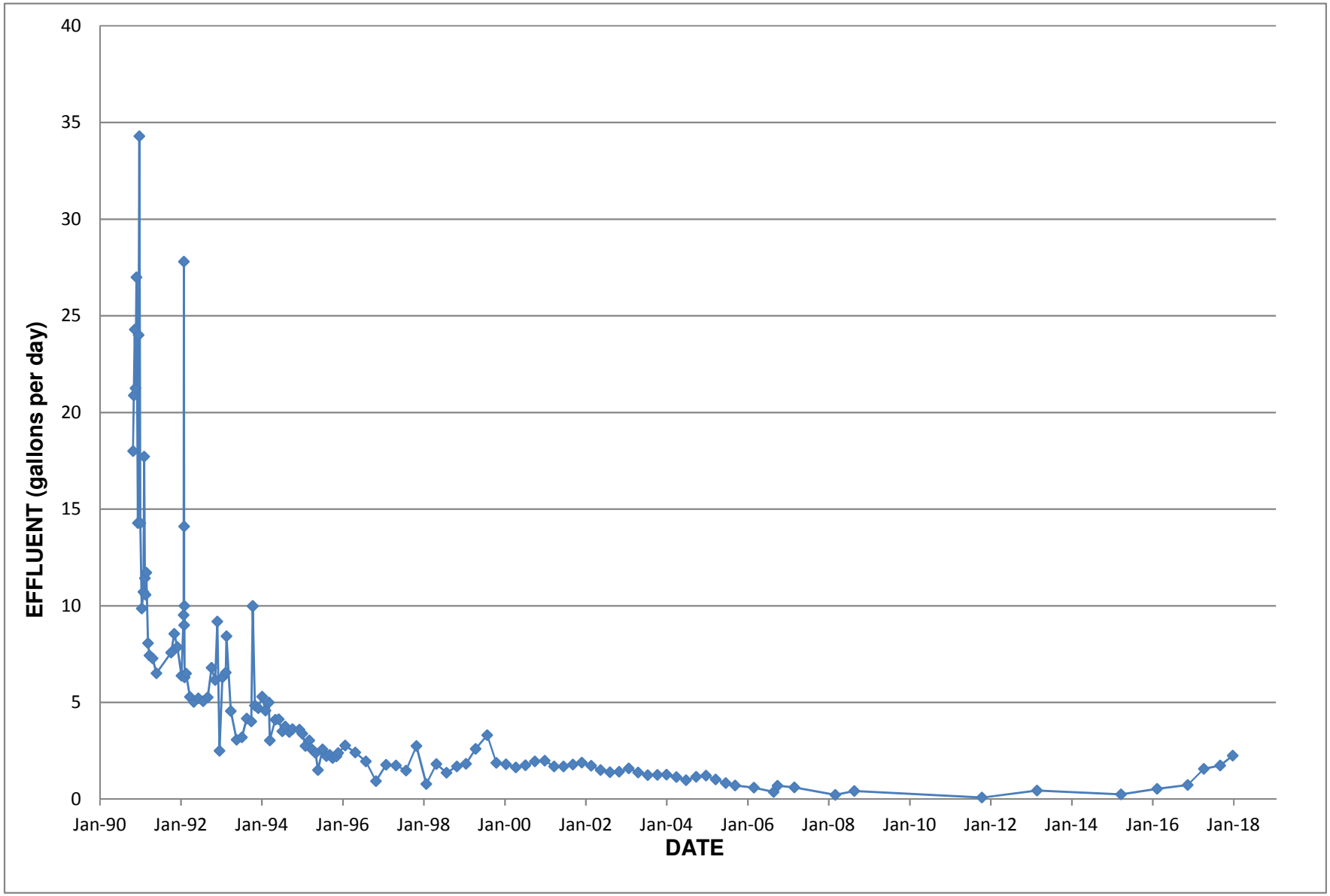


CHART 2
RCRA Groundwater Hydrograph
Lockheed Martin Corporation Site, The Dalles, Oregon

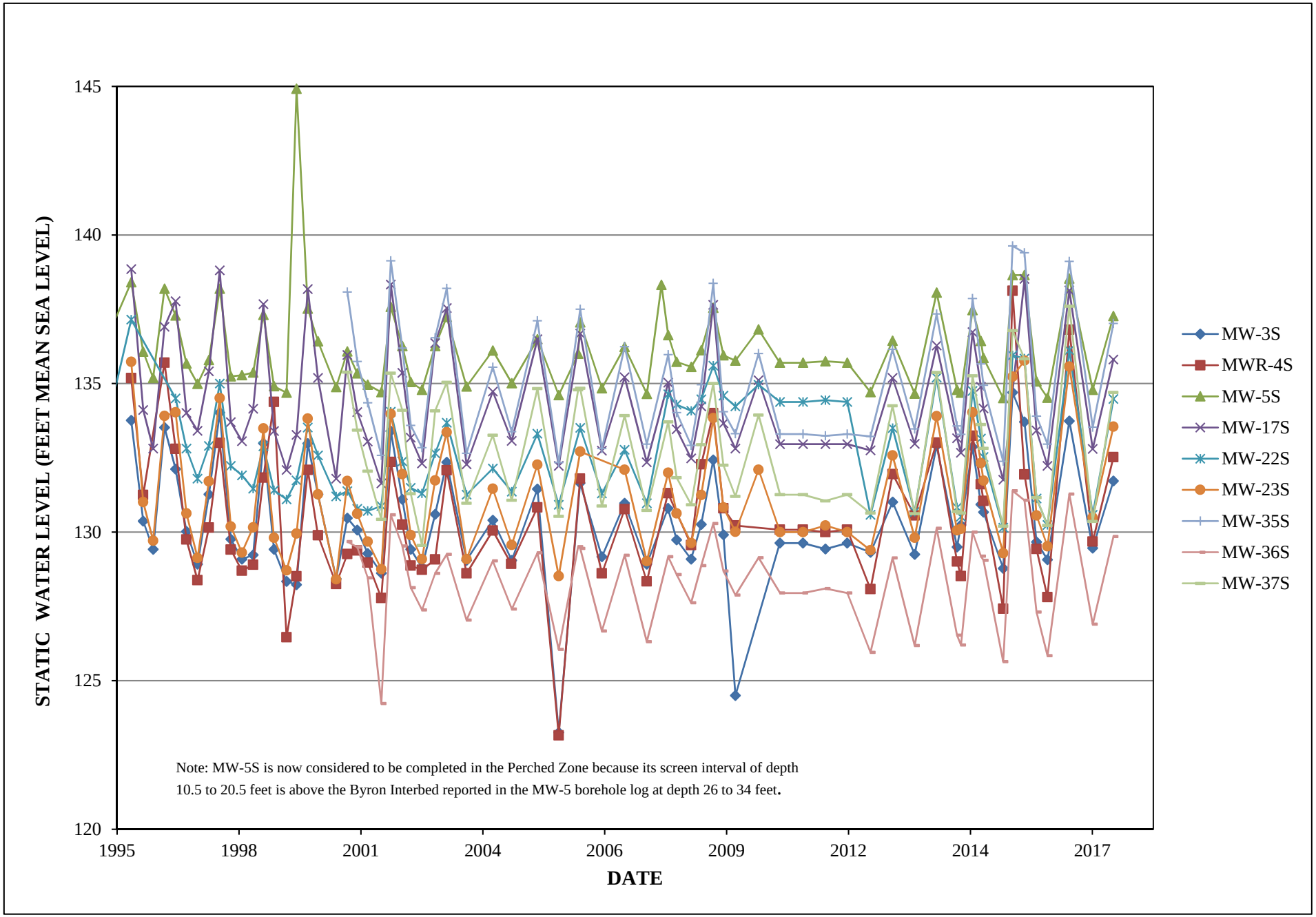


CHART 3
RCRA Groundwater Analytical Data - WAD Cyanide
Lockheed Martin Corporation Site, The Dalles, Oregon

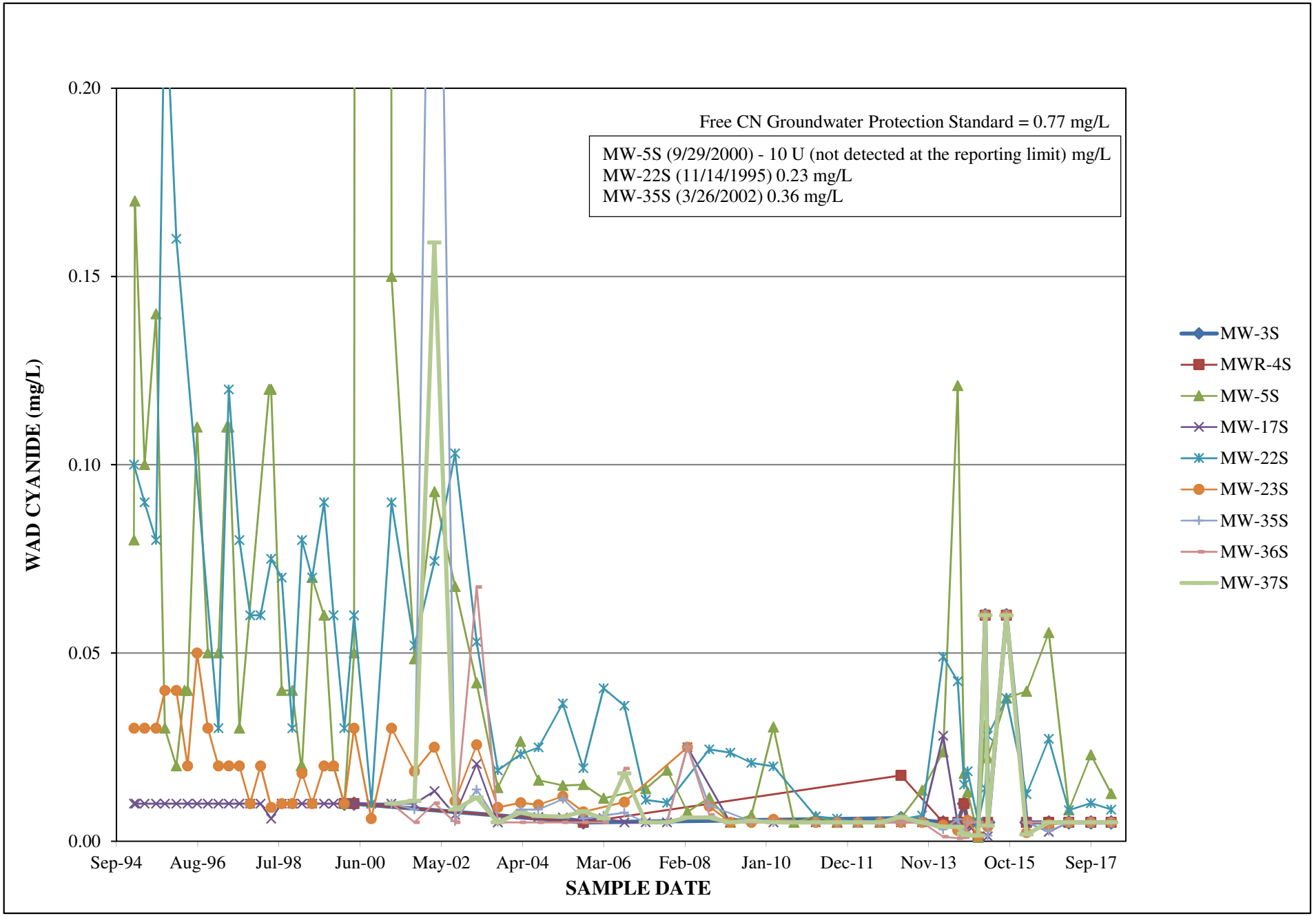


CHART 4
RCRA Groundwater Analytical Data - Fluoride
Lockheed Martin Corporation Site, The Dalles, Oregon

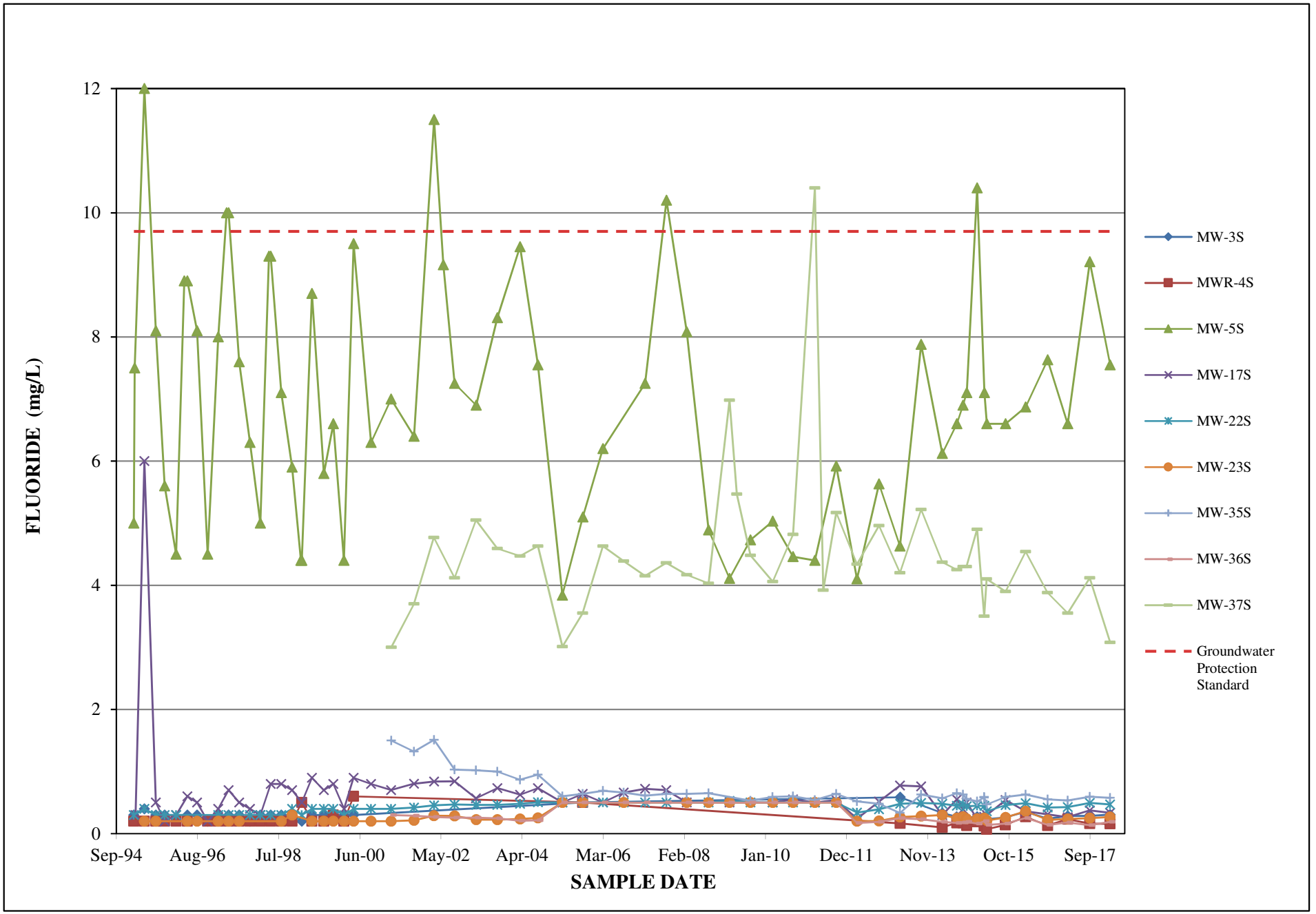


CHART 5
RCRA Groundwater Analytical Data - Sulfate
Lockheed Martin Corporation Site, The Dalles, Oregon

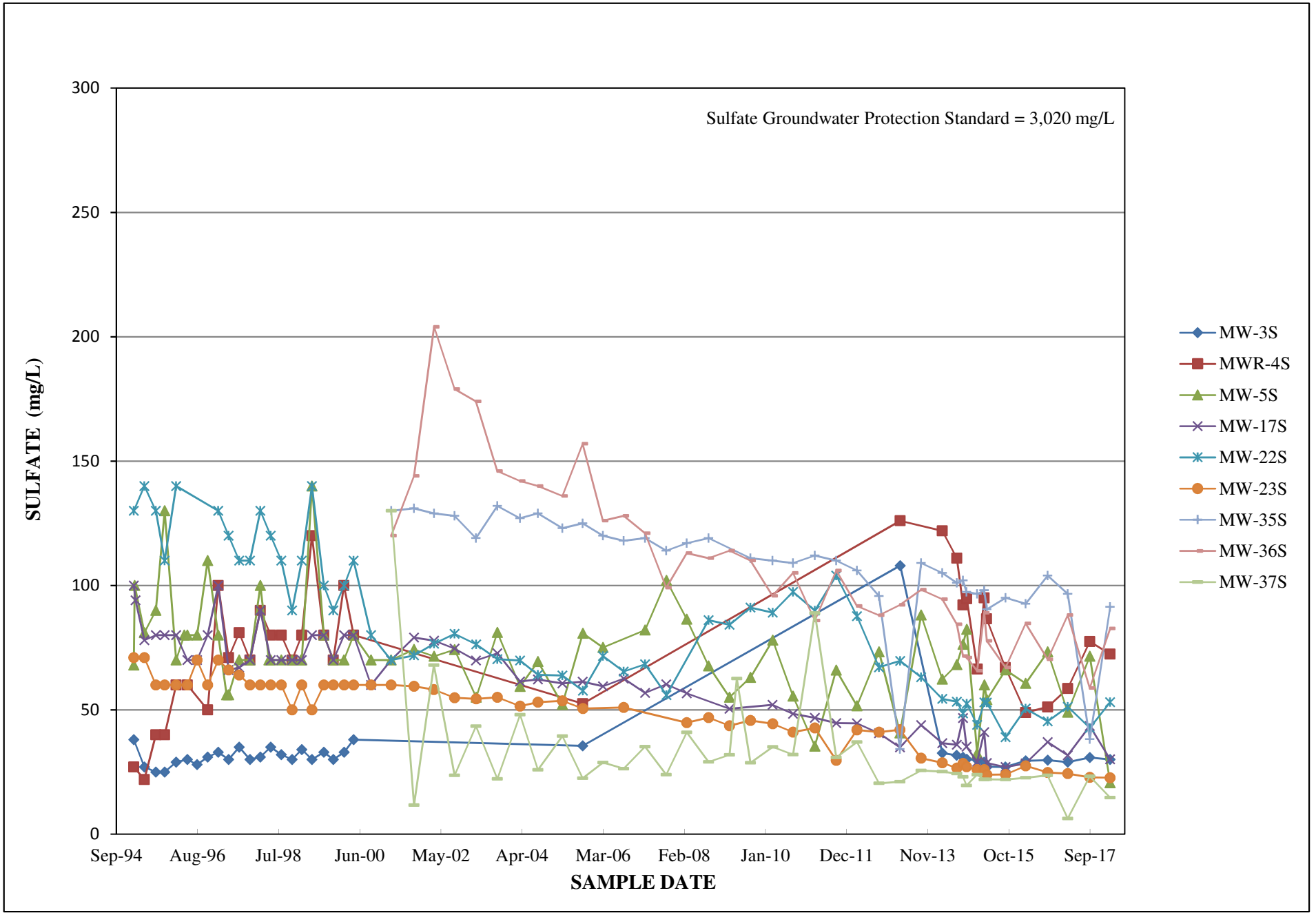
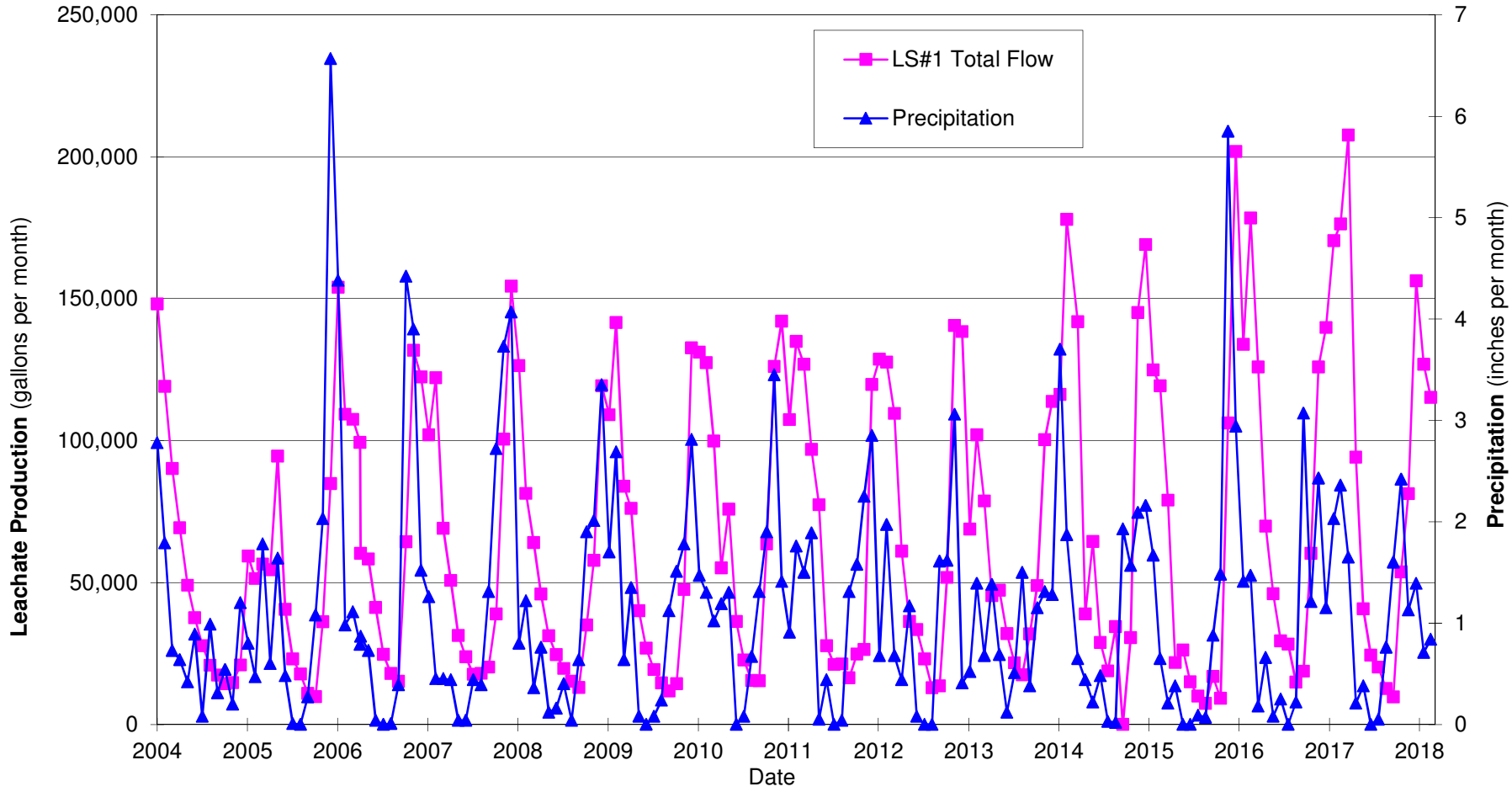


CHART 6. CERCLA Leachate Production vs Rainfall 2004 - Present

Former Martin Marietta Reduction Facility

Lockheed Martin Corporation

The Dalles, Oregon



Note: Daily precipitation data as reported by Northwest Aluminum Company and NOAA.

CHART 7
CERCLA Groundwater Hydrograph - S Zone
Lockheed Martin Corporation Site, The Dalles, Oregon

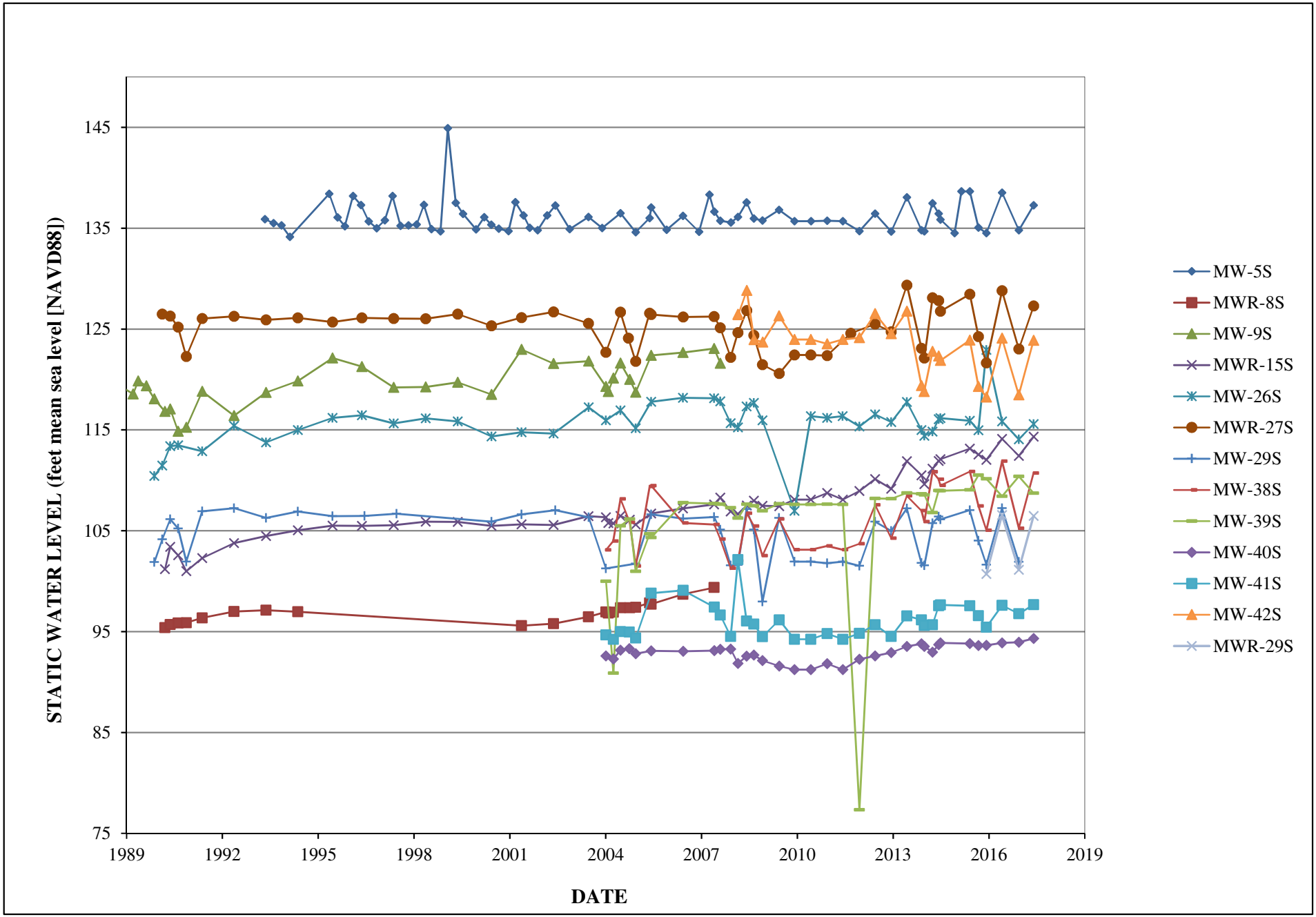


CHART 8
CERCLA Groundwater Hydrograph - A Aquifer
Lockheed Martin Corporation Site, The Dalles, Oregon

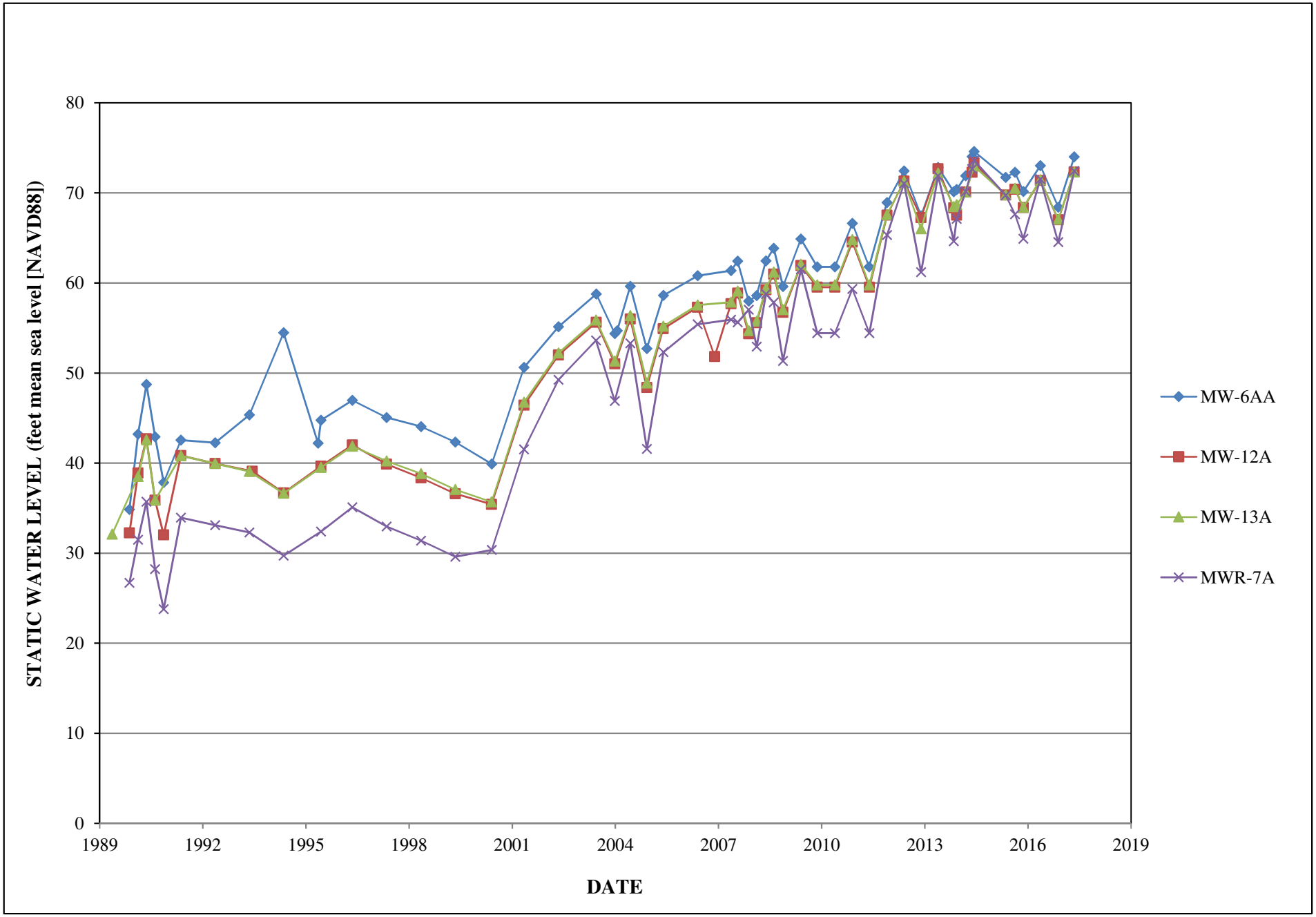


CHART 9
CERCLA Groundwater Analytical Data - WAD Cyanide, S Zone
Lockheed Martin Corporation Site, The Dalles, Oregon

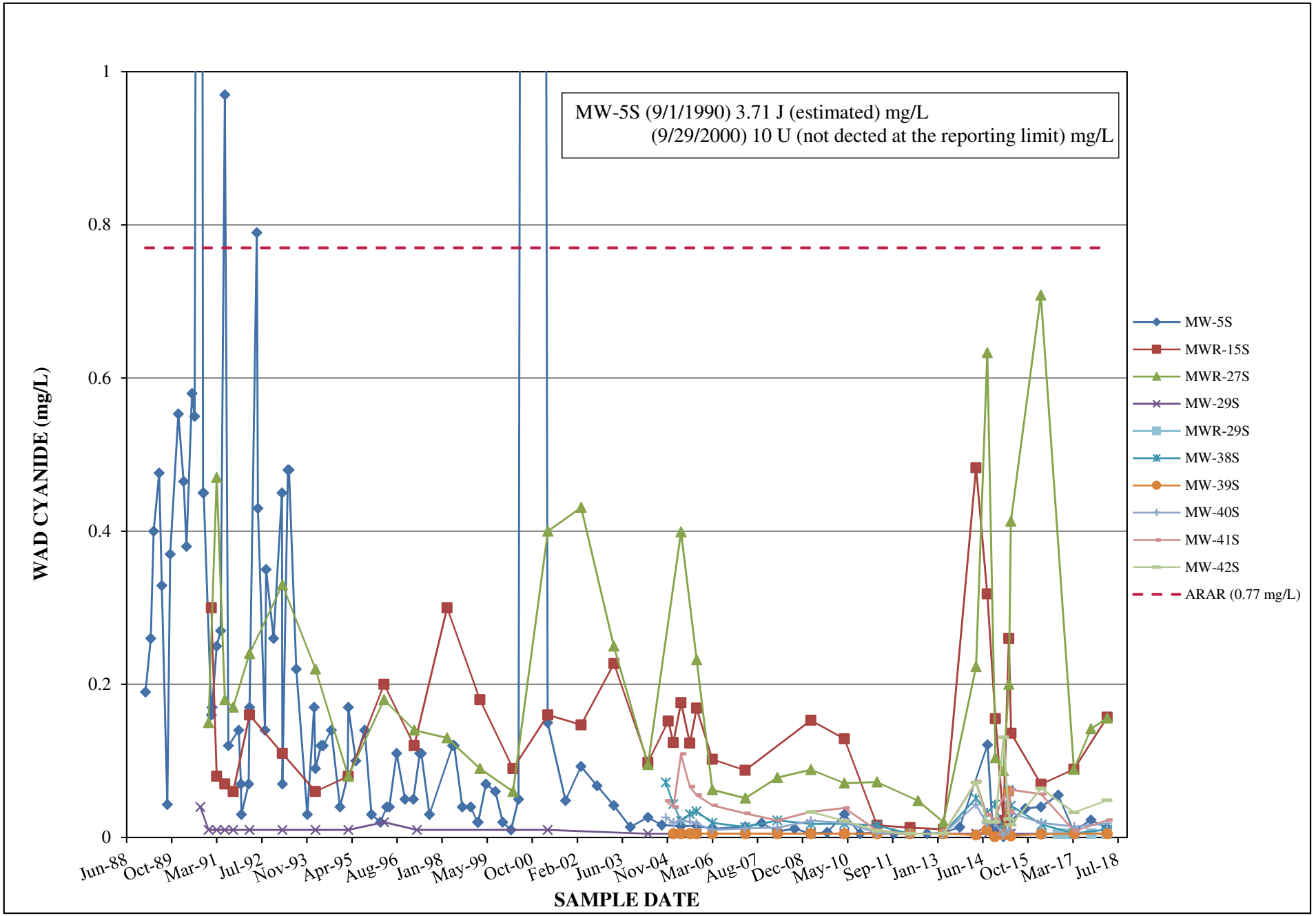


CHART 10
CERCLA Groundwater Analytical Data - Fluoride, S Zone
Lockheed Martin Corporation Site, The Dalles, Oregon

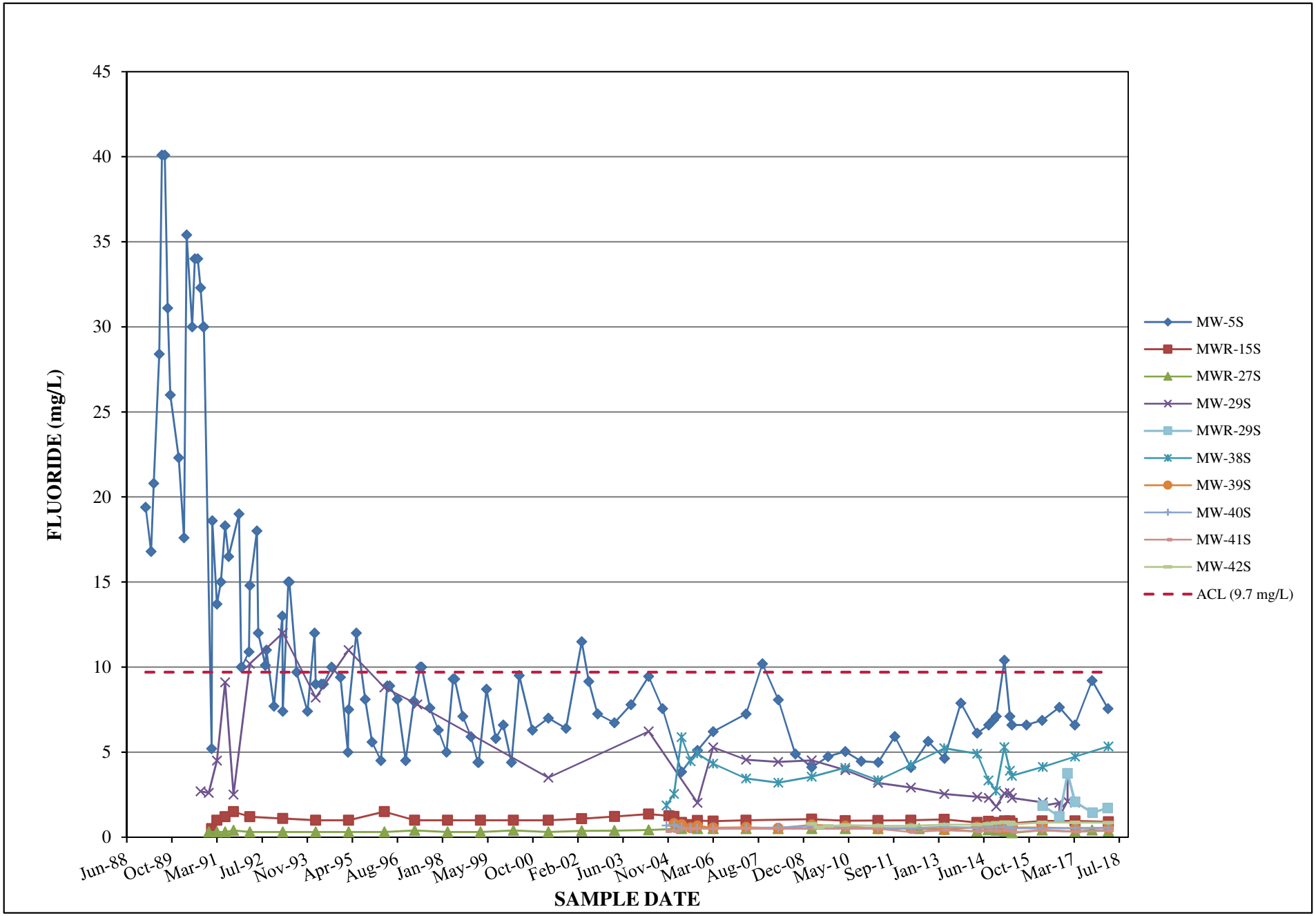


CHART 11
CERCLA Groundwater Analytical Data - Sulfate, S Zone
Lockheed Martin Corporation Site, The Dalles, Oregon

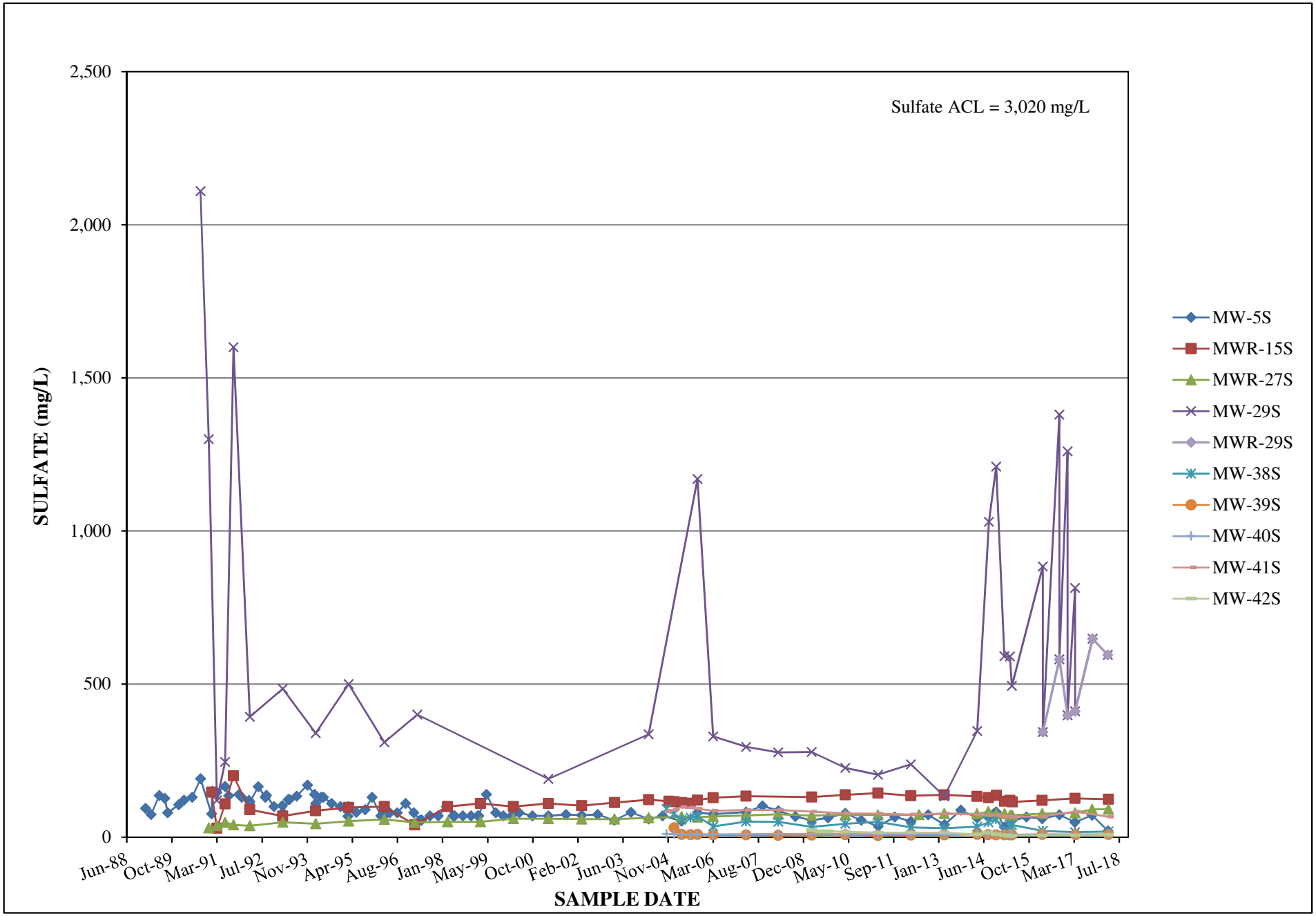


CHART 12
CERCLA Groundwater Analytical Data - WAD Cyanide, A Aquifer
Lockheed Martin Corporation Site, The Dalles, Oregon

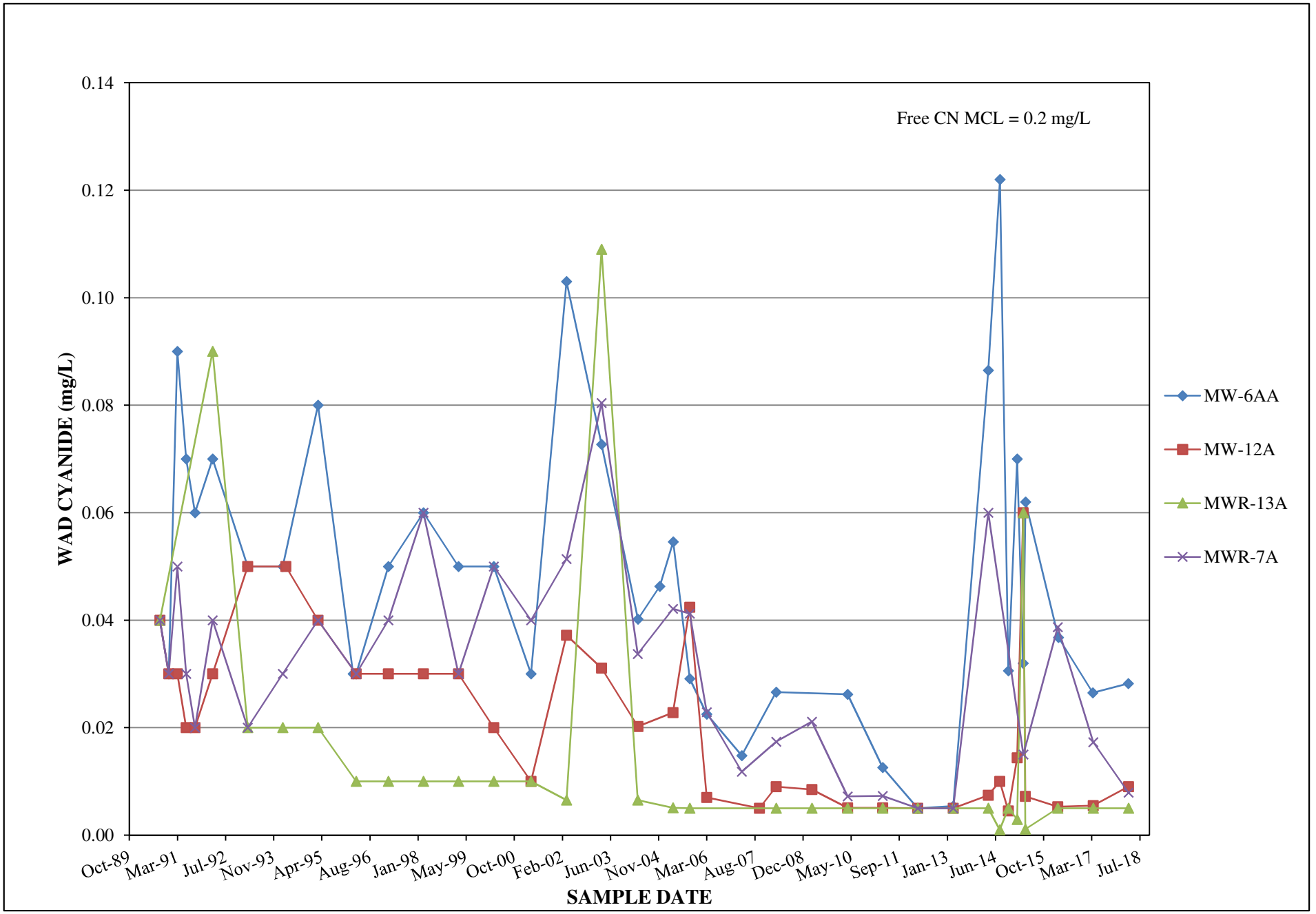


CHART 13
CERCLA Groundwater Analytical Data - Fluoride, A Aquifer
Lockheed Martin Corporation Site, The Dalles, Oregon

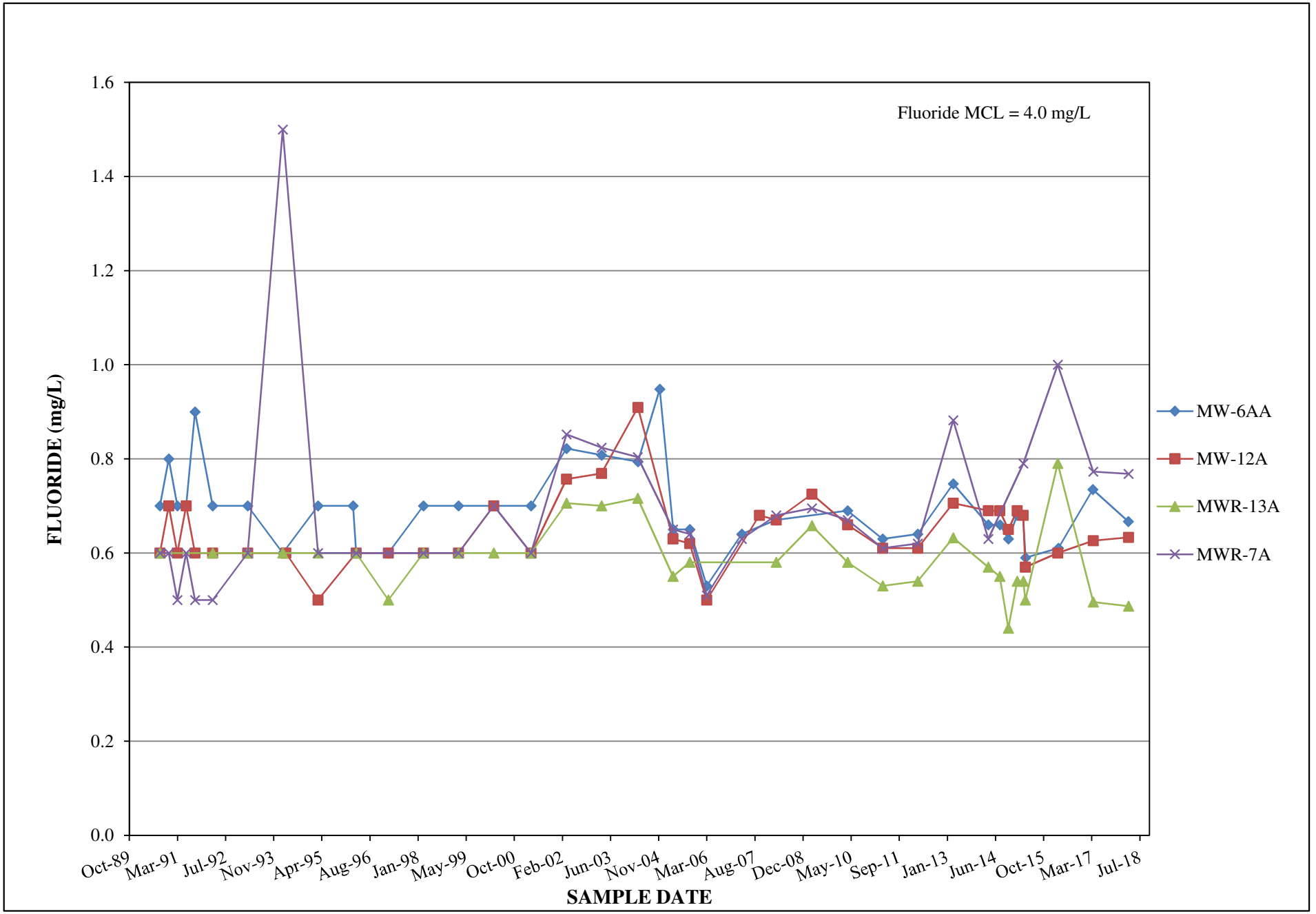
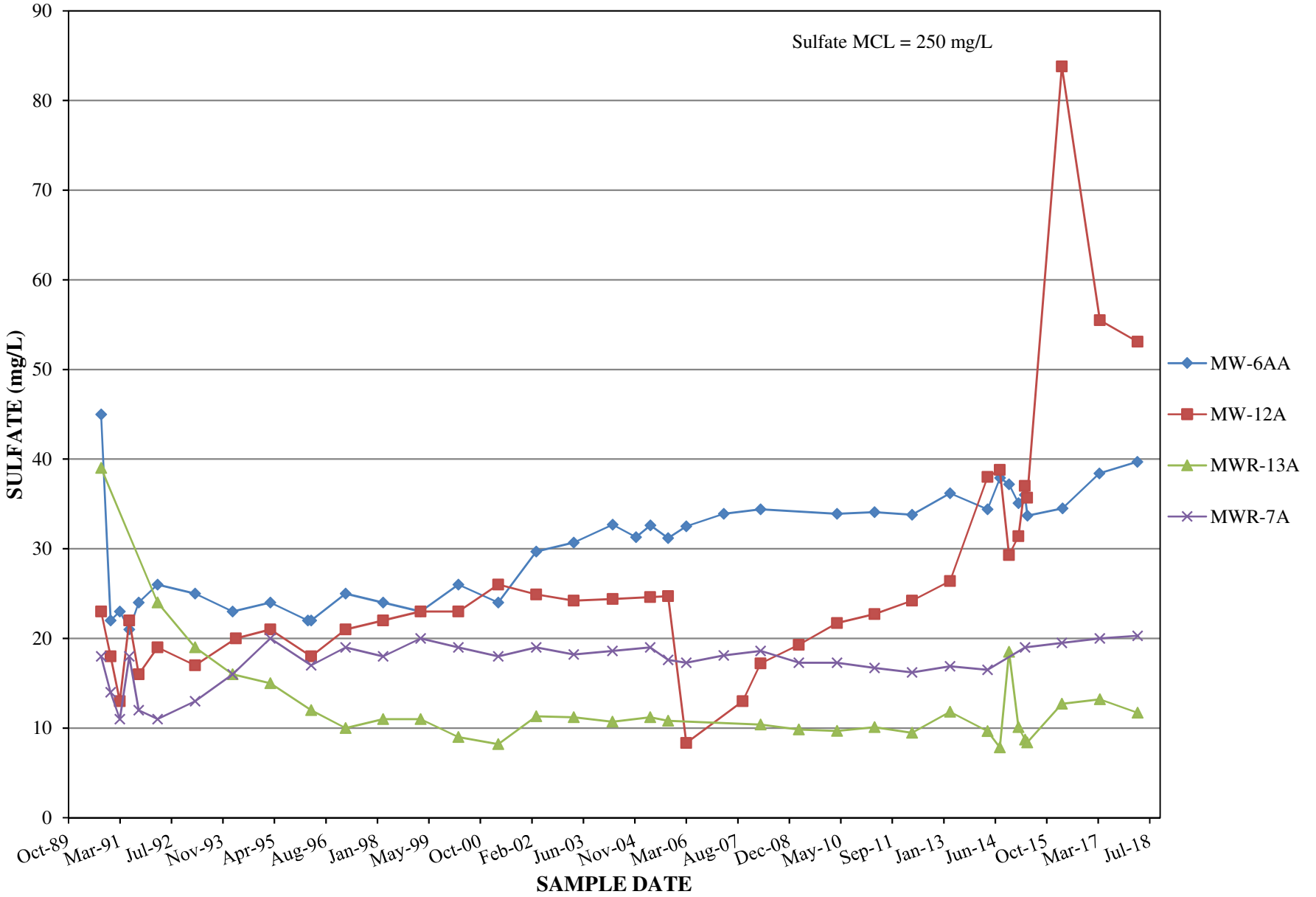


CHART 14
CERCLA Groundwater Analytical Data - Sulfate, A Aquifer
Lockheed Martin Corporation Site, The Dalles, Oregon



APPENDIX A

RCRA Inspection Forms

RCRA Landfill- Leachate Collection System
Quarterly/Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Date/Time: 12/11/17

Inspected by: WDM

Inspectors Signature:

Reviewed by:

Reviewer's Signature:

Note: This form replaces the RCRA Landfill-LCS weekly inspection form

Cover Inspection:	**Observation**	**Remarks**
Top Erosion	ND	
Top Settling / Subsidence	ND	
Ponded Water (or signs of)	ND	
Animal Burrows	ND	
Woody Vegetation	ND	
Benchmarks (4 on top)	yes	
(survey every 4.5 years)	—	May 2018
Side Riprap Erosion	ND	
Slope Stability/Failures	ND	

Gas Vent System:

	Observation	**Remarks**
Vent Pipes Damaged	ND	
Vent Caps Clogged	ND	
Vent Screens Missing	ND	
Survey Vents with Benchmarks (4.5 yrs)	—	May 2018

Lightning Rod System:

	Observation	**Remarks**
Lightning Rods Damaged	ND	
Cable Connections Loose or Damaged	ND	
Metal Bonds Damaged	ND	
Connectors Tight	ND	
Leads Connected (no loose ends)	ND	
Down-conductors Damaged, Including Fittings and Bolts	ND	

Cap Drain Discharge Pipes:

	Observation	**Remarks**
Pipes Damaged	ND	
Pipes Clogged	ND	

Drainage System:

	Observation	**Remarks**
Ponded Water (or signs of)	ND	
Channels Blocked (weeds, litter, silt)	ND	
Culverts Blocked (weeds, litter, silt)	ND	

Areas Adjacent to Landfill:

	Observation	**Remarks**
Riprap Erosion	ND	
Ponded Water, Silt Deposits	ND	
Well Heads (good condition, locked)	yes	

RCRA Landfill- Leachate Collection System
Quarterly/Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

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Building, Fences and Gates:

	Observation	Remarks
Warning Signs in Place (minimum 4)	Yes	
Building Secured	Yes	
Gate Lock Secured and Lock Boxes in Place	Yes	
Damaged Fence or Posts	NO	
Tumbleweeds (safety or fire hazard)	Yes	Cleared
Gaps / Animal Burrows Beneath Fence	NO	
Top Wires Secure	Yes	
Check Benchmark (1 north of gate)	Yes	
Perimeter Berms Inspected	Yes	
Access Roads Inspected	Yes	

Building and Slab:

	Observation	Remarks
Exit light OK?	Yes	
Emergency Light OK?	Yes	
Emergency Equiptment OK?	Yes	
Roofing and Siding OK?	Yes	
Outside Dewatering Pump OK?	Yes	
Concrete Slab Inspected and OK?	Yes	
Sump Evacuated, Inspected and OK?	Yes	

Leachate Sump Inspection:

	Observation	Remarks
Depth to Leachate (ft)	4.10	
Leachate Valve Open?	Yes	
Secondary Petcock Checked?	Yes	
Quarterly Wet Test of Leak Alarm	Yes	
Quarterly Wet Test of High Value?	Yes	
Leachate Pumped from Sump?	NO	
If Pumped- Record Gallons	—	
If Pumped to Drums- label w/ Hazardous Waste Decal w/Date	—	

Leachate Drum Inspection:

	Observation	Remarks
Is Leachate stored in Drums?	NA	
Drums Properly Marked?	NA	
Drum Condition Good?	NA	

Autodialer:

	Observation	Remarks
Operational	Yes	
Test Alarm Completed (wet tests)	Yes	
Alarm Light Operational	Yes	

RCRA Landfill- Leachate Collection System
Quarterly/Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Date/Time: 3/22/18

Inspected by: JW6/WJM Inspectors Signature:

Reviewed by: CLS Reviewer's Signature:

Note: This form replaces the RCRA Landfill-LCS weekly inspection form

Cover Inspection:	Observation	Remarks
Top Erosion	NO	
Top Settling / Subsidence	NO	
Ponded Water (or signs of)	NO	
Animal Burrows	NO	
Woody Vegetation	NO	
Benchmarks (4 on top)	yes	
(survey every 4.5 years)	N/A	May 2018
Side Riprap Erosion	NO	
Slope Stability/Failures	NO	

Gas Vent System:	Observation	Remarks
Vent Pipes Damaged	NO	
Vent Caps Clogged	NO	
Vent Screens Missing	NO	
Survey Vents with Benchmarks (4.5 yrs)	N/A	May 2018

Lightning Rod System:	Observation	Remarks
Lightning Rods Damaged	NO	
Cable Connections Loose or Damaged	NO	
Metal Bonds Damaged	NO	
Connectors Tight	yes	
Leads Connected (no loose ends)	yes	
Down-conductors Damaged, Including Fittings and Bolts	NO	

Cap Drain Discharge Pipes:	Observation	Remarks
Pipes Damaged	NO	
Pipes Clogged	NO	

Drainage System:	Observation	Remarks
Ponded Water (or signs of)	NO	
Channels Blocked (weeds, litter, silt)	NO	
Culverts Blocked (weeds, litter, silt)	NO	

Areas Adjacent to Landfill:	Observation	Remarks
Riprap Erosion	NO	
Ponded Water, Silt Deposits	NO	
Well Heads (good condition, locked)	yes	

RCRA Landfill- Leachate Collection System
Quarterly/Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Building, Fences and Gates:

	Observation	Remarks
Warning Signs in Place (minimum 4)	Yes	
Building Secured	Yes	
Gate Lock Secured and Lock Boxes in Place	Yes	
Damaged Fence or Posts	~~Yes~~ No	NO
Tumbleweeds (safety or fire hazard)	NO	
Gaps / Animal Burrows Beneath Fence	NO	
Top Wires Secure	Yes	
Check Benchmark (1 north of gate)	Yes	
Perimeter Berms Inspected	Yes	
Access Roads Inspected	Yes	

Building and Slab:

	Observation	Remarks
Exit light OK?	Yes	
Emergency Light OK?	Yes	
Emergency Equiptment OK?	Yes	
Roofing and Siding OK?	Yes	
Outside Dewatering Pump OK?	Yes	
Concrete Slab Inspected and OK?	Yes	
Sump Evacuated, Inspected and OK?	OK	not evacuated

Leachate Sump Inspection:

	Observation	Remarks
Depth to Leachate (ft)	4.65	
Leachate Valve Open?	Yes	
Secondary Petcock Checked?	Yes	
Quarterly Wet Test of Leak Alarm	Yes	
Quarterly Wet Test of High Value?	Yes	
Leachate Pumped from Sump?	NO	
If Pumped- Record Gallons	N/A	
If Pumped to Drums- label w/ Hazardous Waste Decal w/Date	N/A	

Leachate Drum Inspection:

	Observation	Remarks
Is Leachate stored in Drums?	NO	
Drums Properly Marked?	N/A	Empties marked "Empty"
Drum Condition Good?	N/A	

Autodialer:

	Observation	Remarks
Operational	Yes	
Test Alarm Completed (wet tests)	Yes	
Alarm Light Operational	Yes	

APPENDIX B

Precipitation Data

SOURCE: National Oceanographic and Atmospheric Administration (NOAA), National Weather Service Weather Observation Data Dallesport Airport, Washington.
http://w2.weather.gov/climate/xmacis.php?wfo=pdt

DAILY DATA FOR A MONTH: daily maximum, minimum and average temperature (degrees F), average temperature departure from normal (degrees F), heating degree days (HDD) and cooling degree days (CDD; base 65), precipitation, snowfall and snow depth (inches) for all days of the selected month. Basic monthly summary statistics are also provided (red maximum monthly high; blue minimum monthly low; green maximum single day precipitation in month).

Climatological Data for DALLESPORT AIRPORT, WA - October 2017							
Date	Temperature				HDD	CDD	Precipitation
	Maximum	Minimum	Average	Departure			
2017-10-01	67	51	59.0	-1.3	6	0	0.00
2017-10-02	68	48	58.0	-1.9	7	0	0.00
2017-10-03	71	40	55.5	-4.0	9	0	0.00
2017-10-04	73	34	53.5	-5.5	11	0	0.00
2017-10-05	73	37	55.0	-3.6	10	0	0.00
2017-10-06	74	38	56.0	-2.2	9	0	0.00
2017-10-07	68	53	60.5	2.8	4	0	T
2017-10-08	68	45	56.5	-0.8	8	0	0.00
2017-10-09	70	37	53.5	-3.4	11	0	0.00
2017-10-10	63	40	51.5	-4.9	13	0	0.00
2017-10-11	57	37	47.0	-9.0	18	0	T
2017-10-12	53	37	45.0	-10.6	20	0	0.33
2017-10-13	59	40	49.5	-5.7	15	0	0.09
2017-10-14	61	32	46.5	-8.2	18	0	0.00
2017-10-15	68	34	51.0	-3.3	14	0	0.00
2017-10-16	69	34	51.5	-2.4	13	0	0.00
2017-10-17	66	39	52.5	-1.0	12	0	0.00
2017-10-18	63	47	55.0	1.9	10	0	0.00
2017-10-19	61	49	55.0	2.3	10	0	0.06
2017-10-20	61	41	51.0	-1.2	14	0	T
2017-10-21	50	43	46.5	-5.3	18	0	0.63
2017-10-22	67	45	56.0	4.6	9	0	0.49
2017-10-23	67	39	53.0	1.9	12	0	0.00
2017-10-24	66	39	52.5	1.8	12	0	0.00
2017-10-25	73	36	54.5	4.2	10	0	0.00
2017-10-26	68	45	56.5	6.6	8	0	0.00
2017-10-27	67	38	52.5	3.0	12	0	0.00
2017-10-28	67	38	52.5	3.4	12	0	0.00
2017-10-29	64	36	50.0	1.2	15	0	0.00
2017-10-30	62	33	47.5	-0.9	17	0	0.00
2017-10-31	67	28	47.5	-0.5	17	0	0.00
Sum	2031	1233	-	-	374	0	1.60
Average	65.5	39.8	52.6	-1.4	-	-	-
Normal	65.7	42.3	54.0	-	345	4	0.99

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : midnight
Min Temperature : midnight
Precipitation : midnight

Climatological Data for DALLESPORT AIRPORT, WA - November 2017							
Date	Temperature				HDD	CDD	Precipitation
	Maximum	Minimum	Average	Departure			
2017-11-01	63	47	55.0	7.3	10	0	T
2017-11-02	59	44	51.5	4.2	13	0	0.03
2017-11-03	53	35	44.0	-3.0	21	0	0.01
2017-11-04	49	39	44.0	-2.6	21	0	T
2017-11-05	52	35	43.5	-2.8	21	0	0.12
2017-11-06	43	34	38.5	-7.4	26	0	0.05
2017-11-07	42	31	36.5	-9.1	28	0	0.00
2017-11-08	42	35	38.5	-6.7	26	0	0.13
2017-11-09	48	36	42.0	-2.9	23	0	0.37
2017-11-10	49	39	44.0	-0.5	21	0	0.22
2017-11-11	50	44	47.0	2.8	18	0	0.00
2017-11-12	53	46	49.5	5.7	15	0	T
2017-11-13	59	40	49.5	6.0	15	0	0.06
2017-11-14	61	35	48.0	4.9	17	0	0.00
2017-11-15	53	41	47.0	4.2	18	0	0.10
2017-11-16	52	37	44.5	2.1	20	0	0.00
2017-11-17	53	37	45.0	2.9	20	0	T
2017-11-18	53	31	42.0	0.3	23	0	0.00
2017-11-19	40	**28**	34.0	-7.4	31	0	0.01
2017-11-20	59	38	48.5	7.4	16	0	**0.61**
2017-11-21	47	41	44.0	3.3	21	0	0.22
2017-11-22	51	44	47.5	7.1	17	0	0.12
2017-11-23	**67**	44	55.5	15.4	9	0	0.27
2017-11-24	57	35	46.0	6.3	19	0	0.00
2017-11-25	43	34	38.5	-0.9	26	0	0.03
2017-11-26	50	37	43.5	4.4	21	0	0.04
2017-11-27	55	34	44.5	5.7	20	0	0.00
2017-11-28	47	38	42.5	4.0	22	0	0.03
2017-11-29	54	35	44.5	6.3	20	0	0.00
2017-11-30	44	32	38.0	0.1	27	0	T
Sum	1548	1126	-	-	605	0	2.42
Average	51.6	37.5	44.6	2.0	-	-	-
Normal	50.0	35.3	42.6	-	670	0	2.14

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : midnight
Min Temperature : midnight
Precipitation : midnight

Climatological Data for DALLESPORT AIRPORT, WA - December 2017							
Date	Temperature				HDD	CDD	Precipitation
	Maximum	Minimum	Average	Departure			
2017-12-01	48	34	41.0	3.4	24	0	0.00
2017-12-02	45	34	39.5	2.2	25	0	T
2017-12-03	52	40	46.0	9.0	19	0	0.00
2017-12-04	51	30	40.5	3.7	24	0	0.00
2017-12-05	46	27	36.5	0.0	28	0	0.00
2017-12-06	43	24	33.5	-2.8	31	0	0.00
2017-12-07	37	26	31.5	-4.6	33	0	0.00
2017-12-08	37	34	35.5	-0.4	29	0	0.00
2017-12-09	36	35	35.5	-0.2	29	0	0.00
2017-12-10	35	34	34.5	-1.0	30	0	0.00
2017-12-11	36	33	34.5	-0.8	30	0	0.00
2017-12-12	35	33	34.0	-1.2	31	0	0.00
2017-12-13	36	33	34.5	-0.5	30	0	0.00
2017-12-14	37	34	35.5	0.6	29	0	0.00
2017-12-15	43	32	37.5	2.7	27	0	0.00
2017-12-16	50	35	42.5	7.8	22	0	T
2017-12-17	47	33	40.0	5.4	25	0	T
2017-12-18	55	42	48.5	14.0	16	0	0.00
2017-12-19	51	38	44.5	10.0	20	0	0.13
2017-12-20	49	32	40.5	6.1	24	0	0.00
2017-12-21	43	26	34.5	0.1	30	0	0.00
2017-12-22	45	33	39.0	4.6	26	0	0.17
2017-12-23	34	19	26.5	-7.9	38	0	0.10
2017-12-24	25	19	22.0	-12.4	43	0	T
2017-12-25	28	23	25.5	-9.0	39	0	0.02
2017-12-26	29	26	27.5	-7.0	37	0	0.00
2017-12-27	32	27	29.5	-5.1	35	0	T
2017-12-28	34	28	31.0	-3.6	34	0	0.43
2017-12-29	36	32	34.0	-0.7	31	0	0.28
2017-12-30	52	31	41.5	6.7	23	0	T
2017-12-31	40	28	34.0	-0.9	31	0	0.00
Sum	1267	955	-	-	893	0	1.13
Average	40.9	30.8	35.8	0.6	-	-	-
Normal	40.3	30.2	35.2	-	922	0	2.73

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : midnight
Min Temperature : midnight
Precipitation : midnight

Climatological Data for DALLESPORT AIRPORT, WA - January 2018							
Date	Temperature				HDD	CDD	Precipitation
	Maximum	Minimum	Average	Departure			
2018-01-01	38	31	34.5	-0.5	30	0	0.00
2018-01-02	35	33	34.0	-1.1	31	0	0.00
2018-01-03	36	31	33.5	-1.7	31	0	0.00
2018-01-04	40	33	36.5	1.2	28	0	0.01
2018-01-05	39	33	36.0	0.6	29	0	0.10
2018-01-06	51	**28**	39.5	4.0	25	0	0.00
2018-01-07	43	36	39.5	3.9	25	0	0.05
2018-01-08	40	35	37.5	1.7	27	0	0.01
2018-01-09	50	38	44.0	8.1	21	0	0.13
2018-01-10	51	40	45.5	9.5	19	0	T
2018-01-11	55	39	47.0	10.9	18	0	**0.46**
2018-01-12	**56**	45	50.5	14.3	14	0	0.00
2018-01-13	55	37	46.0	9.6	19	0	0.00
2018-01-14	44	36	40.0	3.5	25	0	0.00
2018-01-15	46	42	44.0	7.4	21	0	0.01
2018-01-16	48	36	42.0	5.3	23	0	0.12
2018-01-17	47	39	43.0	6.2	22	0	0.10
2018-01-18	53	36	44.5	7.6	20	0	T
2018-01-19	49	32	40.5	3.5	24	0	0.00
2018-01-20	51	31	41.0	3.9	24	0	0.00
2018-01-21	47	30	38.5	1.3	26	0	T
2018-01-22	50	31	40.5	3.2	24	0	0.01
2018-01-23	42	33	37.5	0.1	27	0	0.11
2018-01-24	49	38	43.5	6.0	21	0	0.01
2018-01-25	47	30	38.5	1.0	26	0	T
2018-01-26	48	31	39.5	1.9	25	0	0.01
2018-01-27	55	37	46.0	8.3	19	0	0.16
2018-01-28	49	42	45.5	7.7	19	0	0.09
2018-01-29	53	45	49.0	11.1	16	0	0.01
2018-01-30	52	37	44.5	6.6	20	0	T
2018-01-31	47	34	40.5	2.5	24	0	0.00
Sum	1466	1099	-	-	723	0	1.39
Average	47.3	35.5	41.4	4.8	-	-	-
Normal	42.2	31.0	36.6	-	880	0	2.50

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : midnight
Min Temperature : midnight
Precipitation : midnight

Climatological Data for DALLESPORT AIRPORT, WA - February 2018							
Date	Temperature				HDD	CDD	Precipitation
	Maximum	Minimum	Average	Departure			
2018-02-01	49	39	44.0	5.9	21	0	**0.19**
2018-02-02	62	44	53.0	14.8	12	0	T
2018-02-03	63	53	58.0	19.7	7	0	0.00
2018-02-04	65	55	60.0	21.7	5	0	0.00
2018-02-05	60	50	55.0	16.6	10	0	0.00
2018-02-06	58	48	53.0	14.5	12	0	0.00
2018-02-07	**66**	44	55.0	16.4	10	0	0.00
2018-02-08	63	37	50.0	11.3	15	0	0.00
2018-02-09	54	43	48.5	9.6	16	0	0.00
2018-02-10	51	31	41.0	2.0	24	0	0.00
2018-02-11	49	30	39.5	0.4	25	0	T
2018-02-12	45	25	35.0	-4.3	30	0	0.00
2018-02-13	48	20	34.0	-5.4	31	0	0.00
2018-02-14	52	38	45.0	5.4	20	0	0.01
2018-02-15	53	37	45.0	5.3	20	0	T
2018-02-16	53	42	47.5	7.6	17	0	0.00
2018-02-17	62	40	51.0	10.9	14	0	0.09
2018-02-18	44	31	37.5	-2.8	27	0	0.10
2018-02-19	35	22	28.5	-12.0	36	0	0.00
2018-02-20	33	20	26.5	-14.2	38	0	T
2018-02-21	33	16	24.5	-16.4	40	0	T
2018-02-22	35	20	27.5	-13.6	37	0	0.01
2018-02-23	37	**13**	25.0	-16.3	40	0	T
2018-02-24	48	29	38.5	-3.1	26	0	0.12
2018-02-25	51	32	41.5	-0.3	23	0	0.16
2018-02-26	49	29	39.0	-3.1	26	0	0.00
2018-02-27	49	25	37.0	-5.3	28	0	0.00
2018-02-28	51	37	44.0	1.4	21	0	0.03
Sum	1418	950	-	-	631	0	0.71
Average	50.6	33.9	42.3	2.4	-	-	-
Normal	48.0	31.8	39.9	-	703	0	1.77

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : midnight
Min Temperature : midnight
Precipitation : midnight

Climatological Data for DALLESPORT AIRPORT, WA - March 2018							
Date	Temperature				HDD	CDD	Precipitation
	Maximum	Minimum	Average	Departure			
2018-03-01	55	40	47.5	4.6	17	0	**0.20**
2018-03-02	53	33	43.0	-0.2	22	0	T
2018-03-03	54	28	41.0	-2.4	24	0	0.00
2018-03-04	53	27	40.0	-3.7	25	0	0.00
2018-03-05	54	33	43.5	-0.5	21	0	0.02
2018-03-06	56	**26**	41.0	-3.3	24	0	0.00
2018-03-07	52	29	40.5	-4.1	24	0	T
2018-03-08	58	35	46.5	1.7	18	0	T
2018-03-09	56	37	46.5	1.4	18	0	T
2018-03-10	61	29	45.0	-0.4	20	0	0.00
2018-03-11	64	38	51.0	5.3	14	0	0.00
2018-03-12	67	31	49.0	3.0	16	0	0.00
2018-03-13	59	39	49.0	2.8	16	0	0.17
2018-03-14	56	36	46.0	-0.5	19	0	0.01
2018-03-15	60	28	44.0	-2.7	21	0	T
2018-03-16	52	43	47.5	0.5	17	0	0.17
2018-03-17	58	40	49.0	1.7	16	0	0.04
2018-03-18	57	36	46.5	-1.0	18	0	0.00
2018-03-19	62	30	46.0	-1.7	19	0	0.00
2018-03-20	65	31	48.0	0.0	17	0	0.00
2018-03-21	58	39	48.5	0.3	16	0	0.16
2018-03-22	51	31	41.0	-7.4	24	0	0.05
2018-03-23	48	30	39.0	-9.6	26	0	0.02
2018-03-24	53	37	45.0	-3.8	20	0	T
2018-03-25	55	36	45.5	-3.5	19	0	0.00
2018-03-26	57	40	48.5	-0.7	16	0	0.00
2018-03-27	59	46	52.5	3.1	12	0	0.00
2018-03-28	59	47	53.0	3.4	12	0	0.00
2018-03-29	**68**	42	55.0	5.3	10	0	0.00
2018-03-30	65	49	57.0	7.1	8	0	0.00
2018-03-31	63	40	51.5	1.4	13	0	0.00
Sum	1788	1106	-	-	562	0	0.84
Average	57.7	35.7	46.7	-0.1	-	-	-
Normal	57.0	36.6	46.8	-	564	0	1.16

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : midnight
Min Temperature : midnight
Precipitation : midnight

APPENDIX C

Groundwater Sampling Field Forms

amec foster wheeler

Amec Foster Wheeler
SAMPLING FIELD FORM
CERCLA Liftstations / Manholes

Project Name:	LMC- The Dalles OMM
Project #:	661M129556.01
Location ID:	LMC - The Dalles
Site ID:	LS 1

Field Personnel: WJM Date: 12/11/17

Weather Conditions: Foggy ~35° Approx. Air Temp (F): 35°

FIELD PARAMETERS

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Tubidity (NTU)
1500	16.20	1120	8.10	7.43	301.9	1.67

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank Interlaboratory Split

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
LS1-20171211	1	500 ml	Poly	None	Apex	NO	Fluoride (SW-846-9056) and Sulfate (EPA-300)
↓ ↓ ↓	1	250/250r	Poly	NaOH/Unpres	Apex	NO	WAD Cyanide (SM 4500-CN I/E or EPA 335.4M) and Total Cyanide (EPA 335A)

FIELD TESTING

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES / (NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier Amec Foster Wheeler Delivery UPS/Fed Ex/USPS

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): W.J. McFarland Sampler Signature: [signature] Date Signed: 12/11/17

amec foster wheeler

Amec Foster Wheeler
SAMPLING FIELD FORM
CERCLA Liftstations / Manholes

Project Name:	LMC- The Dalles OMM
Project #:	661M129556.01
Location ID:	LMC - The Dalles
Site ID:	LS 2

Field Personnel: WJM Date: 12/11/17

Weather Conditions: Foggy Approx. Air Temp (F): 35

FIELD PARAMETERS

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Tubidity (NTU)
1535	14.14	1230	7.67	7.61	316.2	1.40

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank Interlaboratory Split

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
LS2-20171211	1	500 ml	Poly	None	Apex	NO	Fluoride (SW-846-9056) and Sulfate (EPA-300)
↓ ↓ ↓	1	250/250r	Poly	NaOH/Unpres	Apex	NO	WAD Cyanide (SM 4500-CN I/E or EPA 335.4M) and Total Cyanide (EPA 335A)

FIELD TESTING

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES / NO If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier Amec Foster Wheeler Delivery UPS/Fed Ex/USPS

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): W.J. McFarland Sampler Signature: [signature] Date Signed: 12/11/17

amec foster wheeler

Amec Foster Wheeler
SAMPLING FIELD FORM
CERCLA Liftstations / Manholes

Project Name:	LMC- The Dalles OMM
Project #:	661M129556.01
Location ID:	LMC- The Dalles
Site ID:	MH2

Field Personnel: WSM Date: 12/12/17

Weather Conditions: Clear Approx. Air Temp (F): 35

FIELD PARAMETERS

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Tubidity (NTU)
1000	14.95	1113	8.20	8.00	307.6	28.1

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank Interlaboratory Split

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MH2-20171212	1	500 ml	Poly	None	Apex	NO	Fluoride (SW-846-9056) and Sulfate (EPA-300)
↓ ↓ ↓	1	250/250r	Poly	NaOH/Unpres	Apex	NO	WAD Cyanide (SM 4500-CN I/E or EPA 335.4M) and Total Cyanide (EPA 335A)

FIELD TESTING

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES / (NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier Amec Foster Wheeler Delivery UPS/Fed Ex/USPS

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): WSMcFarland Sampler Signature: Date Signed: 12/12/17

amec foster wheeler

Amec Foster Wheeler
SAMPLING FIELD FORM
CERCLA Liftstations / Manholes

Project Name:	LMC- The Dalles OMM
Project #:	661M129556.01
Location ID:	LMC- The Dalles
Site ID:	MH-4

Field Personnel: W.JM Date: 12/12/17

Weather Conditions: Cloudy Approx. Air Temp (F): 35

FIELD PARAMETERS

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Tubidity (NTU)
0900	15.12	1146	7.46	7.74	297.4	4.32

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank Interlaboratory Split

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MH-4-20171212	1	500 ml	Poly	None	Apex	NO	Fluoride (SW-846-9056) and Sulfate (EPA-300)
↓ ↓ ↓	1	250/250r	Poly	NaOH/Unpres	Apex	NO	WAD Cyanide (SM 4500-CN I/E or EPA 335.4M) and Total Cyanide (EPA 335A)

FIELD TESTING

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES / NO If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier Amec Foster Wheeler Delivery UPS/Fed Ex/USPS

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): W.J. McFarland Sampler Signature: [signature] Date Signed: 12/12/17

amec foster wheeler

Amec Foster Wheeler
SAMPLING FIELD FORM
CERCLA Liftstations / Manholes

Project Name:	LMC- The Dalles O&M
Project #:	661M129556.01
Location ID:	LS1
Site ID:	LMC The Dalles

Field Personnel: JVG / WJM Date: 3/16/18

Weather Conditions: Cloudy Approx. Air Temp (F): ~45

Field Parameters (YSI 556)

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Tubidity (NTU)
8:35-8:55	13.93	993	7.13	7.59	+285.7	3.4

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank Interlaboratory Split

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
LS1-20180316	1	1 L	Poly	None	Apex	NO	Fluoride (SW-846-9056) and Sulfate (EPA-300)
"	1	500ml	Poly	NaOH	Apex	NO	WAD Cyanide (SM 4500-CN I/E or EPA 335.4M) and Total Cyanide (EPA 335A)

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted? (YES) NO

Sample Transport (circle one): courier (Amec Foster Wheeler Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/16/18

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

amec foster wheeler

Amec Foster Wheeler
SAMPLING FIELD FORM
CERCLA Liftstations / Manholes

Project Name:	LMC- The Dalles O&M
Project #:	661M129556.01
Location ID:	LS-2
Site ID:	LMC The Dalles

Field Personnel: JVG / WJM Date: 3/16/18

Weather Conditions: cloudy Approx. Air Temp (F): ~45

Field Parameters (YSI 556)

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Tubidity (NTU)
8:10	12.95	1032	7.87	7.69	+311.5	13.5

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank Interlaboratory Split

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
LS2-20180316	1	1 L	Poly	None	Apex	NO	Fluoride (SW-846-9056) and Sulfate (EPA-300)
"	1	500ml	Poly	NaOH	Apex	NO	WAD Cyanide (SM 4500-CN I/E or EPA 335.4M) and Total Cyanide (EPA 335A)

All samples were immediately placed into a cooler and packed with ice or "Blue-Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier Amec Foster Wheeler Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/16/18

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

amec foster wheeler	Amec Foster Wheeler **SAMPLING FIELD FORM** **CERCLA Liftstations / Manholes**	Project Name: LMC- The Dalles O&M Project #: 661M129556.01 Location ID: MH-2 Site ID: LMC The Dalles

Field Personnel: JVG / WJM Date : 3/16/18

Weather Conditions: cloudy / drizzle Approx. Air Temp (F): ~40

Field Parameters (YSI 556)

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Tubidity (NTU)
7:40 – 8:00	10.08	825	~~17.09~~ 11.09	8.33	+278.8	5.2

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank Interlaboratory Split

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MH2-20180316	1	1 L	Poly	None	Apex	NO	Fluoride (SW-846-9056) and Sulfate (EPA-300)
"	1	500ml	Poly	NaOH	Apex	NO	WAD Cyanide (SM 4500-CN I/E or EPA 335.4M) and Total Cyanide (EPA 335A)

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier Amec Foster Wheeler Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/16/18

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

amec foster wheeler

Amec Foster Wheeler
SAMPLING FIELD FORM
CERCLA Liftstations / Manholes

Project Name:	LMC- The Dalles O&M
Project #:	661M129556.01
Location ID:	MH 4
Site ID:	LMC The Dalles

Field Personnel: JVG / WJM Date: 3/16/18

Weather Conditions: cloudy / drizzle Approx. Air Temp (F): ~40

Field Parameters (YSI 556)

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Tubidity (NTU)
7:10- 7:30	12.44	1306	10.10	8.43	+250.9	11.4

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank Interlaboratory Split

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MH4-20180316	1	1 L	Poly	None	Apex	NO	Fluoride (SW-846-9056) and Sulfate (EPA-300)
"	1	500ml	Poly	NaOH	Apex	NO	WAD Cyanide (SM 4500-CN I/E or EPA 335.4M) and Total Cyanide (EPA 335A)

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier ~~Amec Foster Wheeler Delivery~~ UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/16/18

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-25

Field Personnel: JVG / WJM
Date: 3/20/18
Weather Conditions: clear
Approx. Air Temp (F): ~60

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other:
Casing Diameter (in.): 2

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 12:38
Depth to Water (TOC - ft.): 12.33
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
12.55	8.49	264	1.6	4.02	160.4	12.78	16:35	cell
12.89	8.43	263	1.0	2.20	+176.6	12.86	16:55	4
12.89	8.43	263	0.9	2.17	+180.4	12.86	17:00	5
12.88	8.44	263	0.9	2.16	+178.4	12.86	17:05	6
							~~17:05~~	

Total Purged: 6L
Final DTW: 12.86
Total Drawdown: 0.08

Purge Pumping Rate (approx. mL/m): 2L .2L/m
Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low
Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/20/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18
Time Sampled: 17:05
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW25-20180320	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MWR-20

Field Personnel: JVG / WJM
Date: 3/21/18
Weather Conditions: Cloudy
Approx. Air Temp (F): 45

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/21/18 1230
Depth to Water (TOC - ft.): 42.77
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.00	8.82	216	1.2	8.26	+190.5	42.42	12:00	cell
13.60	8.65	220	0.9	7.03	+193.9	42.46	12:20	4
13.58	8.59	220	0.9	6.98	+194.3	42.47	12:25	5
13.52	8.58	220	0.9	6.97	+195.3	42.44	12:30	6

Total Purged: 6L
Final DTW: 42.44
Total Drawdown: 42.56 - 42.77 = 0.21

Purge Pumping Rate (approx. mL/m): .2 L/M
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / (Bladder Pump) / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/21/18 0710

Field Observations/Notes of Sampling Event: RB02 is a bladder pump blank

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18
Time Sampled: 12:30
RB02 @ 12:35
QA/QC Sample (circle one): DUP Lab MS/MSD (Equip Blank) Trip Blank (None) JS

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MWR2A-20180321	2	250/250 ml	Poly	NaOH/unpres.	Apex		Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex		Fluoride (SW846-9056); Sulfate (300.0)
RB02-20180321	2	↓	↓	↓	↓	RB02	↓
"	1	↓	↓	↓	↓	RB02	↓

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES (NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW-33

Field Personnel: JVG/WJM **Date:** 3/15/18
Weather Conditions: clear **Approx. Air Temp (F):** ~45

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 10:55 Depth to Water (TOC - ft.): 8.63
Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (ug/L) (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
12.99	8.02	304	2.0	5.39	+134.9	8.86	8:30	3
14.30	8.14	304	1.9	3.60	+131.9	8.90	8:50	4
14.30	8.14	306	1.7	3.57	+132.2	8.89	8:55	5
14.29	8.14	304	1.6	3.54	+132.4	8.89	9:00	6

Total Purged: 6 L Final DTW: 8.89 Total Drawdown: .13

Purge Pumping Rate (approx. mL/m): ~200 mL/M Approx. Pump/Intake Depth:
Well Yield: High / (Moderate) / Low Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / (Bladder Pump) / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event: Trace bit of orange bio in purge water

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 Time Sampled: 9:00
QA/QC Sample (circle one): DUP (Lab MS/MSD) Equip Blank Trip Blank None

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW33-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	MS/MSD	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW-43

Field Personnel: Jason Gardner / Bill McFarlane
Date: 3/14/18
Weather Conditions: Partly Clear/windy
Approx. Air Temp (F): ~54

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 14:40
Depth to Water (TOC - ft.): 10.70
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
16.90	6.20	498	4.6	5.14	+208.7	10.70	14:40	cell
17.17	6.46	457	2.2	4.35	+201.5	10.78	14:50	2
17.20	6.49	454	2.0	4.34	+201.1	10.78	14:55	3
17.21	6.50	452	1.9	4.32	+201.9	10.78	15:00	4

Total Purged: 4 L
Final DTW: 10.78
Total Drawdown: .08
Purge Pumping Rate (approx. mL/m): .25/4
Approx. Pump/Intake Depth: screen
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / ~~Peristaltic Pump~~ / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/14/18 8:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/14/18
Time Sampled: 15:00
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW43-20180314	3	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
		500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/14/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW-5

Field Personnel: JVG / MWM **Date:** 3/14/18
Weather Conditions: P. Clear **Approx. Air Temp (F):** ~55

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 Depth to Water (TOC - ft.): 9.96
Depth Well Bottom (TOC - ft.): NM

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (ug/L) (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.69	7.86	583	11.4	0.89	+92.6	9.98	17:20	cell
15.56	7.84	574	1.8	0.33	-20.3	10.05	17:40	4
15.52	7.85	573	1.8	0.21	-20.4	10.05	17:45	5
15.54	7.85	573	1.60	0.21	-22.16	10.06	17:50	6

Total Purged: 6L Final DTW: 10.06 Total Drawdown: .10

Purge Pumping Rate (approx. mL/m): .2 L/M Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/14/18 0600

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/14/18 Time Sampled: 17:50
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW5-20180314	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	"	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/14/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: NW-59

Field Personnel: JVG / WJM
Date: 3/15/18
Weather Conditions: Clear
Approx. Air Temp (F): ~55

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 11:37
Depth to Water (TOC - ft.): 30.89
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.25	7.36	1342	5.3	3.24	+212.8	30.95	11:05	Cell
15.43	7.29	1355	1.4	3.05	+225.6	30.99	11:25	4
15.06	7.28	1356	1.4	3.05	+225.9	30.99	11:30	5
15.01	7.28	1356	1.4	3.01	+226.2	30.99	11:35	6

Total Purged: 6L
Final DTW: 30.99
Total Drawdown: 0.04

Purge Pumping Rate (approx. mL/m): ~250 mL/m
Approx. Pump/Intake Depth: 35 ft
Well Yield: High / Moderate / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18
Time Sampled: 11:35
QA/QC Sample (circle one): (DUP) / Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW59-20180315	2	250/250 ml	Poly	(NaOH/unpres.)	Apex	DUP	(Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex		Fluoride (SW846-9056); Sulfate (300.0))
DUP01-20180315	2	"	"	"	"	"	"
"	1	"	"	"	"	"	"

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" unless otherwise noted: (YES) NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/15/18

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GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-6AA

Field Personnel: JVG/WJM **Date:** 3/20/18

Weather Conditions: clear **Approx. Air Temp (F):** ~60

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/20/18 12:15 Depth to Water (TOC - ft.): 59.80

Depth Well Bottom (TOC - ft.): 3/14/18

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.21	8.31	317	1.2	4.54	+209.7	59.75	15:35	cell
15.08	7.82	305	1.1	3.20	+196.4	59.89	15:55	4
15.08	7.86	305	1.1	3.20	+196.1	59.89	16:00	5
15.09	7.87	305	1.1	3.15	+195.3	59.89	16:05	6

Total Purged: 6L Final DTW: 59.89 Total Drawdown: 0.14

Purge Pumping Rate (approx. mL/m): .2 L/M Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield Dual valve

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water JG Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/20/18 07:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18 Time Sampled: 16:05

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW6AA-20180320	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/NO If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-78A

Field Personnel: JVG / W.M
Date: 3/21/18
Weather Conditions: cloudy
Approx. Air Temp (F): ~50

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 12:46 Depth to Water (TOC - ft.): 60.39
Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
13.36	8.19	290	3.7	9.26	+218.7	60.38	13:30	3
14.05	7.94	280	1.3	3.70	+227.7	60.39	13:50	4
14.03	7.93	280	1.5	3.66	+228.0	60.47	13:55	5
14.03	7.97	279	1.5	3.65	+226.1	60.44	14:00	6

Total Purged: 6L Final DTW: 60.44 Total Drawdown: 0.36

Purge Pumping Rate (approx. mL/m): ~ 2L/M Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / (Dedicated) / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/21/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18 Time Sampled: 14:00
QA/QC Sample (circle one): (DUP #6) Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW-78A-20180321	3	(250/250 ml)	Poly	(NaOH/unpres.)	Apex	DUP #6	(Total CN (335.4); WAD CN (SM4500)
"	1	(500 ml)	Poly	(None)	Apex		Fluoride (SW846-9056); Sulfate (300.0))
DUP-20180321	3	↓	↓	↓	↓	↓	↓
"	1	↓	↓	↓	↓	↓	↓

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue-Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gordon Sampler Signature: Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW-12A

Field Personnel: JVG / WJM
Date: 3/21/18
Weather Conditions: cloudy
Approx. Air Temp (F): ~45

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/21/18 13:05 Depth to Water (TOC - ft.): 71.87
Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
17.28	8.16	367	1.8	8.70	+221.5	77.53	17:50	cell
16.60	8.00	370	0.9	8.00	+219.7	77.65	18:10	4
16.58	7.98	370	0.9	8.00	+219.9	77.68	18:15	5
16.56	7.97	370	0.8	7.99	+219.9	77.62	18:20	6

Total Purged: 6L Final DTW: 77.62 Total Drawdown: 0.00 0.11

Purge Pumping Rate (approx. mL/m): .24/m Approx. Pump/Intake Depth: 58
Well Yield: High / (Moderate) / Low Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/21/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18 Time Sampled: 18:20
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW12A-20180321	3	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MWR-13A

Field Personnel: JVB / WJM
Date: 3/21/18
Weather Conditions: clear
Approx. Air Temp (F): ~50

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition: (OK) / NA / Needs Repairs/Repaired
Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: (OK) / NA / Needs Repairs/Repaired
Inner Casing Condition: (OK) / NA / Needs Repairs / Repaired
Paint Condition: (OK) / NA / Needs Repairs/Repaired
Monument Condition: (OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 13:00
Depth to Water (TOC - ft.): 39.67
Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.36	8.14	245	3.6	(6.55)	+226	39.28	15:40	cell
14.89	8.30	238	2.3	5.39	+223.9	39.46	16:00	4
14.89	8.31	238	2.2	5.29	+223.7	39.46	16:05	5
14.91	8.31	240	2.2	5.33	+224.1	39.45	16:10	6

Total Purged: 6L
Final DTW: 39.45
Total Drawdown: 0.17

Purge Pumping Rate (approx. mL/m): .27M
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / (Bladder Pump) / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time:

Field Observations/Notes of Sampling Event: Dedicated pump went bad. switched to rental bladder pump.

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18
Time Sampled: 16:10
QA/QC Sample (circle one): DUP (Lab MS/MSD) Equip Blank Trip Blank None

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MWR-13A-20180321	6	250/250 ml	Poly	NaOH/unpres.	Apex	MS/MSD	Total CN (335.4); WAD CN (SM4500)
"	3	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MWR-15S

Field Personnel: JVG/WJM **Date:** 3/20/18

Weather Conditions: Clear **Approx. Air Temp (F):** ~60

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/20/18 11:54 Depth to Water (TOC - ft.): 22.62

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.91	9.67	426	2.8	5.26	+224.0	22.77	10:45	Cell
14.82	9.82	392	1.5	1.90	+224.9	22.89	11:05	4
14.82	9.83	391	1.5	1.88	+226.3	22.89	11:10	5
14.85	9.82	390	1.5	1.87	+225.1	22.89	11:15	6

Total Purged: 6L Final DTW: 22.89 Total Drawdown: 0.12

Purge Pumping Rate (approx. mL/m): .2 L/M Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/20/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18 Time Sampled: 11:15

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MWR-15S-20180320	2	250/250 ml	Poly	NaOH/unpres.	Apex	No	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	No	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/NO If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted YES / NO

Sample Transport (circle one): courier Amec FW Delivery UPS/Fed-Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-179

Field Personnel:	JVG / WJM
Date:	3/15/18
Weather Conditions:	P. Clear
Approx. Air Temp (F):	~60's

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement:	3/14/18 11:13	Depth to Water (TOC - ft.):	15.59
Depth Well Bottom (TOC - ft.):	21.4		

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.74	6.94	531	1.2	2.17	+175.7	16.65	14:15	Cell
16.30	7.01	524	0.9	1.94	+171.2	16.73	14:35	4
16.29	7.02	525	0.9	1.92	+171.6	16.73	14:40	5
16.29	7.05	525	0.9	1.91	+171.4	16.73	14:45	6

Total Purged:	6L	Final DTW:	16.73
Total Drawdown:	1.08		

Purge Pumping Rate (approx mL/m): ~200 mL/M Approx. Pump/Intake Depth: Screen

Well Yield: High (Moderate) / Low Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / (Bladder Pump) / Dedicated / Other =

Decontamination Method: Alconox / DI Water / DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/13/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 Time Sampled: 14:45

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW179-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES (NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue-Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed-Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Sampler Signature: Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-229

Date: 3/15/18

Field Personnel: JVG/WJM

Approx. Air Temp (F): ~58

Weather Conditions: Clear

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other:

Casing Diameter (in.):

Casing Condition: OK / NA / Needs Repairs/Repaired

Lock Condition: OK / NA / Needs Repairs / Replaced

Cap Condition: OK / NA / Needs Repairs/Repaired

Inner Casing Condition: OK / NA / Needs Repairs / Repaired

Paint Condition: OK / NA / Needs Repairs/Repaired

Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 11:24

Depth to Water (TOC - ft.): 21.27

Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.36	8.15	317	1.8	2.69	+186.4	21.33	11:40	cell
15.99	8.12	317	1.1	2.01	+185.7	21.39	11:55	3
16.32	8.10	320	1.1	1.37	+181.3	21.33	12:00	4
16.33	8.10	319	1.0	1.35	+181.4	21.39	12:05	5
16.32	8.10	319	1.0	1.34	+181.3	21.39	12:10	6

Total Purged: 6L

Final DTW: 21.39

Total Drawdown: 0.06

Purge Pumping Rate (approx. mL/m): .2 L/m

Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low

Sampling Technique: low-flow / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water

Water Disposal: Storage Tank

Instrument Type & Number: YSI 556

Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled:

Time Sampled: 12:10

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW229-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	N/A	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/NO If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner

Sampler Signature

Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-23S MW-23S

Field Personnel: JVG / WJM **Date:** 3/15/18
Weather Conditions: clear **Approx. Air Temp (F):** ~ 60

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 11:19 Depth to Water (TOC - ft.): 10.24
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.68	8.13	317	4.3	3.69	+187.3	10.32	12:55	cell
15.69	8.10	314	3.2	2.54	+182.9	10.41	13:15	4
15.69	8.09	314	3.0	2.55	+182.8	10.41	13:20	5
15.69	8.09	314	3.0	2.55	+182.3	10.41	13:25	6

Total Purged: 6L Final DTW: 10.41 Total Drawdown: 0.09

Purge Pumping Rate (approx. mL/m): .24M Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 Time Sampled: 13:25
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW23S-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
MW23S "	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-26S

Field Personnel: WS / WJM **Date:** 3/14/18

Weather Conditions: Partly Clear / windy **Approx. Air Temp (F):** ~ 55

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 Depth to Water (TOC - ft.): 20.05

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
13.96	7.89	278	1.6	4.63	+200.4	20.05	15:20	cell
14.11	8.26	266	1.0	2.20	+210.5	19.97	15:40	4
14.09	8.28	268	1.0	2.18	+211.4	19.97	15:55	5
14.09	8.34	267	1.0	2.17	+211.6	19.97	15:50	6

Total Purged: 6 L Final DTW: 19.97 Total Drawdown: .08

Purge Pumping Rate (approx. mL/m): .24/m Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/14/18 8:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/14/18 Time Sampled: 15:50

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW26S-20180314	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES NO If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES NO

Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/14/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MWR-27S

Field Personnel: JVG / WJM
Date: 3/20/18
Weather Conditions: clear
Approx. Air Temp (F): ~ 50

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/20/18 16:35
Depth to Water (TOC - ft.): 13.81
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
13.79	7.91	458	2.6	6.43	+268.4	13.97	8:40	0.64
14.83	8.05	449	1.2	3.86	+263.0	14.21	9:00	4
14.84	8.04	450	1.0	3.04	+260.1	14.21	9:05	5
14.86	8.04	451	1.0	3.02	+259.4	14.21	9:10	6

Total Purged: 6 L
Final DTW: 14.21
Total Drawdown: 0.24

Purge Pumping Rate (approx. mL/m): ~ 2 L/M
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/20/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18
Time Sampled: 9:10
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MWR-27S-20180320	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MWR-29S

Field Personnel: JVG / WJM
Date: 3/14/18
Weather Conditions: P. Clear
Approx. Air Temp (F): ~55

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel PVC CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18
Depth to Water (TOC - ft.): 11.54
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L / mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.28	6.99	2095	6.6	0.36	+222.2	11.55	16:40	Cell
15.28	7.10	2093	2.3	0.18	+219.3	11.59	17:00	4
15.28	7.12	2098	2.3	0.16	+216.1	11.59	17:05	5
15.28	7.12	2090	2.4	0.16	+213.5	11.59	17:10	6

Total Purged: 6L
Final DTW: 11.59
Total Drawdown: 0.05

Purge Pumping Rate (approx. mL/m): .24/4
Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low
Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/14/18 8:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/14/18
Time Sampled: 17.10
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MWR29S-20180314	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	N/A	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/14/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-35S

Field Personnel: JVG / WJH
Date: 3/15/18
Weather Conditions: clear
Approx. Air Temp (F): ~60

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 11:16
Depth to Water (TOC - ft.): 9.74
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.83	8.19	454	1.6	3.84	+178.2	9.78	13:35	cell
15.79	8.17	452	0.8	4.22	+175.5	9.82	13:54	4
15.74	8.17	452	0.8	4.10	+176.1	9.82	14:00	5
15.80	8.14	451	0.8	4.09	+176.3	9.82	14:05	6

Total Purged: 6 L
Final DTW: 9.82
Total Drawdown: 0.04

Purge Pumping Rate (approx. mL/m): .24
Approx. Pump/Intake Depth:
Well Yield: High / Moderate / Low
Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/15/18 0710

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18
Time Sampled: 3/15/18 14:05
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW35S-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES / NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Deliver UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Graline
Sampler Signature:
Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-36S

Field Personnel: JV & WJM | **Date:** 3/15/18

Weather Conditions: clear | **Approx. Air Temp (F):** ~60

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement:	3/15/18 11:21	Depth to Water (TOC - ft.):	16.60
Depth Well Bottom (TOC - ft.):	N/A		

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.56	7.99	374	1.7	2.10	+188.8	16.54	12:15	3
16.11	7.93	392	1.2	0.56	+189.1	16.60	12:35	4
16.11	7.93	393	1.2	0.49	+188.6	16.60	12:40	5
16.14	7.93	393	1.2	0.48	+188.5	16.60	12:45	6

Total Purged: 6L | Final DTW: 16.60 | Total Drawdown: 0.06

Purge Pumping Rate (approx. mL/m): 224M | Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low | Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water | Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 | Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 | Time Sampled: 12:45

QA/QC Sample (circle one): DUP | Lab MS/MSD | Equip Blank | Trip Blank | (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW36S-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	N/A	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis:

Color change observed? YES/(NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner | Sampler Signature: [signature] | Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-37S

Field Personnel: JVB / WJM **Date:** 3/15/18

Weather Conditions: Clear **Approx. Air Temp (F):** ~ 55

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 11:10 3/14/18 Depth to Water (TOC - ft.): 8.94

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
12.89	7.36	393	8.2	4.15 V	+141.3	8.99	10:25	2L
12.72	7.17	370	6.4	6.77	+157.1	9.16	10:45	4
12.75	7.17	370	6.4	6.80	+157.5	9.16	10:50	5
12.74	7.17	370	6.4	6.79	+157.9	9.16	10:55	6

Total Purged: 6L Final DTW: Est 9.16 Total Drawdown: 0.17

Purge Pumping Rate (approx. mL/m): .24/M Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield

Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 Time Sampled: 3/15/18 10:55

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW37S-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	N/A	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES (NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-383

Field Personnel: JVG/WJM **Date:** 3/20/18
Weather Conditions: Clear **Approx. Air Temp (F):** ~65

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 12:17 Depth to Water (TOC - ft.): 22.47
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
16.20	8.60	363	6.2	3.75	+189.3	22.61	14:50	cell
16.68	8.11	374	3.7	1.97	+231.3	22.69	15:10	4
16.63	8.12	374	3.4	1.94	+240.7	22.69	15:15	5
16.63	8.12	374	3.3	1.94	+241.8	22.69	15:20	6

Total Purged: 6L Final DTW: 22.69 Total Drawdown: 0.08

Purge Pumping Rate (approx. mL/m): 2 L/M Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/20/18 9:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18 Time Sampled: 15:20
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW389-20180320	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-39S

Field Personnel: JVG / WSM
Date: 3/21/18
Weather Conditions: mostly cloudy
Approx. Air Temp (F): ~50

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other:
Casing Diameter (in.): 4"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 13:07
Depth to Water (TOC - ft.): 35.93
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.87	7.99	273	5.2	4.56	+215.6	34.57	17:10	ccm
15.54	7.74	152	2.8	4.66	+212.6	35.01	17:30	4
15.53	7.81	150	2.6	4.70	+213.1	35.02	17:35	5
15.53	7.82	154	2.5	4.67	+213.2	35.02	17:40	6

Total Purged: 6L
Final DTW: 35.02
Total Drawdown: 0.59
Purge Pumping Rate (approx. mL/m): .24/M
Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low
Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/21/18 07:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18
Time Sampled: 17:40
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW39S-20180321	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES / NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-403

Field Personnel: JVG / WJM **Date:** 3/21/18

Weather Conditions: Cloudy **Approx. Air Temp (F):** ~47

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 12:50 Depth to Water (TOC - ft.): 48.05

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.34	7.89	229	2.4	1.62	+220.8	48.48	15:00	<2 L
15.42	8.44	227	2.4	1.14	+221.5	48.62	15:20	4
15.42	8.44	226	2.3	1.11	+221.6	48.64	15:25	5
15.41	8.42	228	2.3	1.10	+221.7	48.65	15:30	6

Total Purged: 6L Final DTW: 48.65 Total Drawdown: 0.17

Purge Pumping Rate (approx. mL/m): ~2 L/M Approx. Pump/Intake Depth: screen

Well Yield: High / (Moderate) / Low Sampling Technique: low-flow / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / (Dedicated) / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/21/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18 Time Sampled: 15:30

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW403-20180321		250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"		500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/(NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice" unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Vander Sampler Signature: [signature] Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-413

Field Personnel: JVB / WSM **Date:** 3/21/18

Weather Conditions: cloudy **Approx. Air Temp (F):** ~ 50

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other: | Casing Diameter (in.): 2"

Casing Condition: (OK) / NA / Needs Repairs/Repaired | Lock Condition: (OK) / NA / Needs Repairs / Replaced

Cap Condition: (OK) / NA / Needs Repairs/Repaired | Inner Casing Condition: (OK) / NA / Needs Repairs / Repaired

Paint Condition: (OK) / NA / Needs Repairs/Repaired | Monument Condition: (OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 12:48 | Depth to Water (TOC - ft.): 35.27

Depth Well Bottom (TOC - ft.): NA

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.29	8.21	423	4.2	7.22	+225.4	35.12	12:50	CBV
15.36	8.17	373	2.6	6.35	+225.4	36.01	13:10	4
15.46	8.19	373	2.2	6.29	+223.7	35.72	13:15	5
15.37	8.22	373	2.2	6.25	+222.6	35.60	13:20	6

Total Purged: CBV | Final DTW: 35.60 | Total Drawdown: 0.48

Purge Pumping Rate (approx. mL/m): ~2 L/M | Approx. Pump/Intake Depth: Screen

Well Yield: High / (Moderate) / Low | Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water | Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 | Instrument Calibration Date & Time: 3/21/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18 | Time Sampled: 13:20

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW413-20180321	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/(NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice" unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW-429

Field Personnel: JVG / WJM
Date: 3/19/18
Weather Conditions: D. Clear
Approx. Air Temp (F): ~70

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 11:45
Depth to Water (TOC - ft.): 11.32
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
17.02	6.191	296	3.4	2.87	+190.8	11.63	13:10	cell
18.02	7.960	279	1.2	0.59	+141.3	11.72	13:30	4
18.04	7.902	279	1.2	0.57	+139.2	11.72	13:35	5
18.01	7.904	279	1.2	0.56	+139.1	11.72	13:40	6

Total Purged: 6L
Final DTW: 13:40 11.72
Total Drawdown: 0.09

Purge Pumping Rate (approx. mL/m): .2L/M
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/19/18 11:20

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/19/18
Time Sampled: 3/19/18 13:40
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW429-20180319	3	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue-Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/19/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-01P

Field Personnel: JVG / WJM **Date:** 3/19/18
Weather Conditions: Clear **Approx. Air Temp (F):** ~ 70

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 11:40 3/19/18 Depth to Water (TOC - ft.): 5.02
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.00	6.05	2327	3.5	3.98	+272.8	5.07	1200	cell
14.47	7.95	2289	1.8	1.34	+320.5	5.28	1220	4
14.49	7.96	2294	1.8	1.34	+320.1	5.28	1225	5
14.49	7.96	2291	1.8	1.35	+320.2	5.28	1230	6

Total Purged: 6 L Final DTW: 5.28 Total Drawdown: 0.21

Purge Pumping Rate (approx. mL/m): .2 L/m Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/19/18 11:00

Field Observations/Notes of Sampling Event: yellow hue on purge water

SAMPLING INFORMATION / DATA

Date Sampled: 3/19/18 Time Sampled: 12:30
QA/QC Sample (circle one): DUP #3 Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-01P-20180319	2	250/250 ml	Poly	NaOH/unpres.	Apex	DUP3	Total CN (335.4); WAD CN (SM4500)
MW13-01P-20180319	1	500 ml	Poly	None	Apex		Fluoride (SW846-9056); Sulfate (300.0)
DUP3-20180319	2						
"	1						

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue-Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/19/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-01S

Field Personnel: JVG / WJM **Date:** 3/19/18
Weather Conditions: Clear **Approx. Air Temp (F):** ~70

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 11:42 Depth to Water (TOC - ft.): 11.64
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.54	8.33	561	7.2	8.29	+273.6	12.04	12:35	cell
16.45	5.80	351	5.6	3.24	+207.1	12.67	12:55	2 ~~4~~ 26
16.43	5.86	349	4.9	3.24	+206.5	12.67	13:00	2.5 ~~5~~ 16
16.43	5.86	348	4.8	3.23	+206.2	12.67	13:05	3.0 ~~6~~ 16

Total Purged: 3L Final DTW: 12.67 Total Drawdown: 0.63

Purge Pumping Rate (approx. mL/m): ~.14M Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low very Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/19/18 11:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/19/18 Time Sampled: 13:05
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-01S-20180319	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	N/A	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide Interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/19/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW 13-02P

Field Personnel: JVG / W.JM
Date: 3/20/18
Weather Conditions: CLEAR
Approx. Air Temp (F): ~60s

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 3/20/18 12:52
Depth to Water (TOC - ft.): 5.55
Depth Well Bottom (TOC - ft.): NA

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.82	7.24	8869	4.3	0.37	+227.4	5.48	13:30	cell
14.79	7.17	8605	0.8	0.26	+225.7	5.55	13:50	4
14.80	7.16	8604	0.9	0.25	+226.5	5.59	13:55	5
14.80	7.16	8604	0.9	0.24	+225.4	5.59	14:00	6

Total Purged: 6L
Final DTW: 5.59
Total Drawdown: 0.11

Purge Pumping Rate (approx. mL/m): .24/m
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/20/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18
Time Sampled: 14:00
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-02P-20180320	3	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES (NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed-Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW13-029

Field Personnel: JVG / WJM
Date: 3/20/18
Weather Conditions: Clear
Approx. Air Temp (F): ~65

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 12:30 | Depth to Water (TOC - ft.): 8.39
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
16.25	7.65	397	2.9	2.47	+218.4	8.68	14:05	Gal
16.42	7.81	3688	1.6	1.26	+216.1	8.81	14:25	4
16.44	7.82	367	1.7	1.28	+215.9	8.81	14:30	5
16.41	7.82	367	1.3	1.32	+215.8	8.81	14:35	6

Total Purged: 6 L | Final DTW: 8.81 | Total Drawdown: 0.13

Purge Pumping Rate (approx. mL/m): ~2 L/m | Approx. Pump/Intake Depth: screen
Well Yield: High / (Moderate) / Low | Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water | Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 | Instrument Calibration Date & Time: 3/20/18 14:35 ~~16~~ 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18 | Time Sampled: 1435
QA/QC Sample (circle one): (DUP #5) Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-029-20180320	2	250/250 ml	Poly	(NaOH/unpres.)	Apex	D,P,T,S	(Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex		Fluoride (SW846-9056); Sulfate (300.0))
DUP 5-20180320	2	↓	↓	↓	↓	↓	↓
"	1	↓	↓	↓	↓	↓	↓

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue-Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner | Sampler Signature: [signature] | Date Signed: 3/20/18

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GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW13-02A

Field Personnel: JVG / WSH
Date: 3/21/18
Weather Conditions: P.CLEAR
Approx. Air Temp (F): ~60

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/19/18 1234 Depth to Water (TOC - ft.): 71.10
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.81	11.43	6697	1.4	1.27	142.5	70.98	11:10	3
15.65	11.41	6685	0.9	0.35	199.6	71.16	11:20	4
15.65	11.41	6685	0.9	0.39	199.2	71.20	11:25	5
15.65	11.41	6685	0.9	0.34	199.3	71.16	11:30	6

Total Purged: 6L Final DTW: 71.16 Total Drawdown: 0.18
Purge Pumping Rate (approx. mL/m): .2 L/m Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / (Bladder Pump) / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/21/18 07:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18 Time Sampled: 11:20
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-02A-20180321	3	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW 13 - 03P

Field Personnel: JVG / WJM
Date: 3/21/18
Weather Conditions: cloudy rain
Approx. Air Temp (F): ~45

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.):

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 13:09
Depth to Water (TOC - ft.): 5.25
Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.59	7.98	313	4.5	3.21	+221.1	5.75	16:30	cell
14.34	7.86	315	1.8	1.65	+226.1	6.01	16:50	4
14.29	7.86	316	1.8	1.68	+226.5	6.01	16:55	5
14.26	7.86	316	1.8	1.67	+226.6	6.01	17:00	6

Total Purged: 6L
Final DTW: 6.01
Total Drawdown: 0.76

Purge Pumping Rate (approx. mL/m): .24/M
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/21/18 07:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18
Time Sampled: 17:00
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-03P-20180321	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue-Ice" unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-DUP

Field Personnel: JV6 / WJM **Date:** 3/21/18

Weather Conditions: cloudy **Approx. Air Temp (F):** ~47

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other: | Casing Diameter (in.): 2"

Casing Condition: OK / NA / Needs Repairs/Repaired | Lock Condition: OK / NA / Needs Repairs / Replaced

Cap Condition: OK / NA / Needs Repairs/Repaired | Inner Casing Condition: OK / NA / Needs Repairs / Repaired

Paint Condition: OK / NA / Needs Repairs/Repaired | Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 12:52 | Depth to Water (TOC - ft.): 6.49

Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
11.67	7.95	760.2	5.83	5.38	+231.7	7.50	14:15	cell
12.38	7.89	804	4.7	0.60	+230.3	7.64	14:30	4
12.39	7.92	803	4.8	0.65	+230.2	7.65	14:40	5
12.42	7.93	802	4.7	0.64	+229.9	7.64	14:45	6

Total Purged: 6L | Final DTW: 7.64 | Total Drawdown: 1.14

Purge Pumping Rate (approx. mL/m): .2L/m | Approx. Pump/Intake Depth: Screen

Well Yield: High / (Moderate) / Low | Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / (Bladder Pump) / Dedicated / Other =

Decontamination Method: Alconox / DI Water / DI Water | Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 | Instrument Calibration Date & Time: 3/21/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18 | Time Sampled: 14:45

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-DUP-20180321	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/(NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-05P

Field Personnel: JVC / WSM
Date: 3/19/18
Weather Conditions: P. Clear
Approx. Air Temp (F): P. Clear ~70

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/19/18 11:50
Depth to Water (TOC - ft.): 4.93
Depth Well Bottom (TOC - ft.): 6.19

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
13.99	7.09	845	16.2	1.93	+203.7	4.98	13:55	cell
13.67	7.07	847	1.1	0.73	+237.9	5.13	14:15	4
13.63	7.03	850	1.1	0.72	+242.9	5.13	14:20	5
13.67	7.10	849	1.1	0.75	+242.0	5.13	14:25	6

Total Purged: 6L
Final DTW: 5.13
Total Drawdown: 0.15

Purge Pumping Rate (approx. mL/m): .24 gpm
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/19/18 11:20

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/19/18
Time Sampled: 14:25
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-05P-20180319	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	N/A	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/19/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-06P

Field Personnel: JVG/WJM **Date:** 3/20/18
Weather Conditions: Clear **Approx. Air Temp (F):** ~55

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: | Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/20/18 10:31 | Depth to Water (TOC - ft.): 3.95
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
13.57	8.03	1421	3.1	4.21	+276.2	4.05	9:20	cell
13.33	7.99	1452	1.6	2.52	+296.7	4.29	9:40	4
13.38	7.98	1451	1.6	2.51	+298.1	4.29	9:45	5
13.38	7.98	1452	1.6	2.53	+301.9	4.29	9:50	6

Total Purged: 6L | Final DTW: 0.24 4.29 | Total Drawdown: 0.24

Purge Pumping Rate (approx. mL/m): .24/M Approx. Pump/Intake Depth: screen
Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/20/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18 Time Sampled: 9:50
QA/QC Sample (circle one): DUP #4 Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-06P-20180320	2	250/250 ml	Poly	NaOH/unpres.	Apex	DUP#4	Total CN (335.4); WAD CN (SM4500)
MW13-06P-20180320	1	500 ml	Poly	None	Apex		Fluoride (SW846-9056); Sulfate (300.0)
DUP4-20180320	2						
"	1						

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW 13-065

Field Personnel: JVG / WJM
Date: 3/20/14
Weather Conditions: Clear
Approx. Air Temp (F): ~55

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/14 10:29
Depth to Water (TOC - ft.): 17.15
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.79	8.92	919	1.4	3.82	+191.8	17.33	10:00	cell
14.94	8.17	937	1.4	0.51	+195.0	17.41	10:20	4
14.95	8.16	937	1.4	0.52	+195.3	17.41	10:25	5
14.98	8.17	937	1.3	0.50	+196.3	17.41	10:30	6

Total Purged: 6L
Final DTW: 17.41
Total Drawdown: 0.08

Purge Pumping Rate (approx. mL/m): .24 gpm
Approx. Pump/Intake Depth: 33 feet
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox / DI Water / DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/20/14 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/18/14
Time Sampled: 10:30
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-065-20140320	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/20/14

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-06A

Field Personnel: JVG / WJM **Date:** 3/21/18

Weather Conditions: P Clear **Approx. Air Temp (F):** ~33

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/24/18 10:27 Depth to Water (TOC - ft.): 52.30

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.78	11.82	1508	0.9	1.28	+147.2	52.42	08:00	cen
14.34	11.02	1472	0.9	0.86	+130.6	52.50	08:20	4
14.39	10.98	1472	0.9	0.82	+130.2	52.48	08:25	5
14.41	10.97	1472	0.9	0.83	+130.1	52.51	08:30	6

Total Purged: 6L Final DTW: 52.51 Total Drawdown: 0.09

Purge Pumping Rate (approx. mL/m): 124M Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/21/18 7:0

Field Observations/Notes of Sampling Event:

EB-01 is a solinest equipment blank

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18 Time Sampled: 8:30 EB-01 8:35

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-06A-20180321	2	250/250 ml	Poly	NaOH/unpres.	Apex	EB01	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	EB01	Fluoride (SW846-9056); Sulfate (300.0)
EB01-20180321	2	↓	↓	↓	↓	EB01	↓
"	1						

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/NO If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gaeche Sampler Signature: [signature] Date Signed: 3/21/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-07P

Field Personnel: JVG / WJM
Date: 3/19/18
Weather Conditions: Clear
Approx. Air Temp (F):

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/19/18 14:05
Depth to Water (TOC - ft.): 7.80 7.56
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.49	8.90	2146	7.2	+216.8	0.29	7.66	16:10	2
13.61	8.49	1583	0.4	+177.7	0.043	7.94	16:30	4
13.57	8.40	1540	5.8	+188.1	0.08	7.94	16:35	5
13.56	8.41	1582	5.8	+179.2	0.09	7.90	16:40	6
				↑ ORP mV 03/19/18	↑ Diss. Oxygen mg/L 03/19/18			

Total Purged: 6L
Final DTW: 7.90
Total Drawdown: 0.34

Purge Pumping Rate (approx. mL/m): .24M
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/19/18 11:20

Field Observations/Notes of Sampling Event: Slight yellowish hue on purge water

SAMPLING INFORMATION / DATA

Date Sampled: 3/19/18
Time Sampled: 16:40
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-07P-20180319	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	N/A	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gordon Sampler Signature: Date Signed: 3/19/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-08P

Field Personnel: JVS / WJM **Date:** 3/19/18

Weather Conditions: P. Clear **Approx. Air Temp (F):** ~70

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 12:10 Depth to Water (TOC - ft.): 6.69

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.85	7.91	1843	4.46	4.11	+227.6	6.67	1145	Cell
14.36	7.82	1871	1.2	1.41	+275.8	6.73	1505	4
14.34	7.81	1871	1.2	1.39	+273.6	6.73	1510	5
14.30	7.80	1872	1.2	1.33	+272.1	6.73	1515	6

Total Purged: 6L Final DTW: 6.73 Total Drawdown: 0.04

Purge Pumping Rate (approx. mL/m): ~250 mL/M Approx. Pump/Intake Depth: 16

Well Yield: High / (Moderate) / Low Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/19/18 11:02

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/19/18 Time Sampled: 1515

QA/QC Sample (circle one): DUP (Lab MS/MSD) Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-08P-20180319	3	250/250 ml	Poly	NaOH/unpres.	Apex	MS/MSD	Total CN (335.4); WAD CN (SM4500)
"	6	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/(NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue-Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/19/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-OBS

Field Personnel: JVG / WJM **Date:** 3/19/18

Weather Conditions: Clear **Approx. Air Temp (F):** ~70

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other: | Casing Diameter (in.):

Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 1312 | Depth to Water (TOC - ft.): 23.90

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (ug/L / mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.64	7.92	1090	1.3	2.23	+237.5	23.28	15:35	2L
16.48	7.85	1069	0.9	1.16	+231.9	23.40	15:45	4
16.58	7.86	1068	0.9	1.16	+231.4	23.40	15:50	5
16.51	7.86	1069	0.9	1.16	+231.0	23.40	15:55	6

Total Purged: 6L | Final DTW: 23.40 | Total Drawdown: 0.12

Purge Pumping Rate (approx. mL/m): .24M | Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low | Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water | Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 | Instrument Calibration Date & Time: 3/19/18 11:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/19/18 | Time Sampled: 3/19/18 15:55

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW18-OBS-20180319	3	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/(NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/19/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-13-10P

Field Personnel: JVB / W.JM
Date: 3/20/18
Weather Conditions: Clear
Approx. Air Temp (F): ~ 60's

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 11:04 | Depth to Water (TOC - ft.): 7.77
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.44	7.32	1159	19.3	5.56	+214.0	7.79	12:30	0.64
14.29	7.29	1154	2.2	4.22	+213.1	7.816	12:50	4
14.30	7.29	1153	1.8	4.21	+213.2	7.816	12:55	5
14.31	7.29	1153	1.7	4.24	+213.3	7.816	13:00	6

Total Purged: 6L | Final DTW: 7.816 | Total Drawdown: 0.07

Purge Pumping Rate (approx. mL/m): .24/M | Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low | Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox/DI Water /DI Water | Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 | Instrument Calibration Date & Time: 3/20/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18 | Time Sampled: 13:00
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-10P-20180318	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO | If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner | Sampler Signature: [signature] | Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-11S

Field Personnel: JVG / WJM **Date:** 3/20/18

Weather Conditions: Clear **Approx. Air Temp (F):**

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: | Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 11:03 | Depth to Water (TOC - ft.): 8.86

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.28	8.03	596	5.7	3.00	+208.1	8.83	11:45	cell
15.38	7.91	579	2.6	1.35	+209.8	9.07	12:05	4
15.41	7.91	579	2.3	1.37	+209.8	9.07	12:10	5
15.41	7.91	579	2.3	1.36	+209.7	9.07	12:15	6

Total Purged: Cell | Final DTW: 9.07 | Total Drawdown: 0.24

Purge Pumping Rate (approx. mL/m): .244 Approx. Pump/Intake Depth: Screen

Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/20/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18 Time Sampled: 12:15

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-11S-20180320	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/NO If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW13-12P

Field Personnel: JV6 / WJM
Date: 3/20/18
Weather Conditions: clear
Approx. Air Temp (F): ~34

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"
Casing Condition: (OK) / NA / Needs Repairs/Repaired
Lock Condition: (OK) / NA / Needs Repairs / Replaced
Cap Condition: (OK) / NA / Needs Repairs/Repaired
Inner Casing Condition: (OK) / NA / Needs Repairs / Repaired
Paint Condition: (OK) / NA / Needs Repairs/Repaired
Monument Condition: (OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/19/18 10:39
Depth to Water (TOC - ft.): 9.69
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
11.27	8.91	522	3.9	3.98	+164.2	9.69	8:00	Cal
13.63	7.05	475	2.1	4.17	+192.4	9.74	8:20	4
13.67	7.05	477	2.1	4.12	+194.6	9.74	8:25	5
13.62	7.05	477	2.1	4.13	+194.1	9.74	8:30	6

Total Purged: 6L
Final DTW: 9.74
Total Drawdown: 0.05
Purge Pumping Rate (approx. mL/m): ~200
Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/20/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/20/18
Time Sampled: 8:30
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-12P-032018	3	250/250 ml	Poly	NaOH/unpres.	Apex	NC	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NC	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed-Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/20/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-135

Field Personnel: SVG/WJM **Date:** 3/15/18

Weather Conditions: clear **Approx. Air Temp (F):** ~50

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / (Replaced)
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 10:51 Depth to Water (TOC - ft.): 8.35

Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
13.57	7.79	552	2.1	3.56	+147.4	8.42	9:45	~1
15.20	8.37	524	2.1	0.90	+146.2	8.50	10:05	4
15.26	8.39	517	2.1	0.86	+145.7	8.50	10:10	5
15.21	8.39	519	2.1	0.83	+145.8	8.50	10:15	6

Total Purged: 6L Final DTW: 8.50 Total Drawdown: 0.15

Purge Pumping Rate (approx. mL/m): .2L/M Approx. Pump/Intake Depth: screen

Well Yield: High / (Moderate) / Low Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 Time Sampled: 10:15

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-135-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/(NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): [illegible] Sampler Signature: [signature] Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-14SL

Field Personnel: JVG / WJM **Date:** 3/15/18
Weather Conditions: P. Clear **Approx. Air Temp (F):** ~50

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 13:35 Depth to Water (TOC - ft.): 7.92
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
12.79	7.48	1341	3.5	4.53	+155.2	7.94	16:25	cey
12.82	7.04	881	1.6	4.50	+149.8	8.03	16:45	4
12.86	7.03	870	1.6	4.50	+152.2	8.03	16:50	5
12.85	7.00	870	1.6	4.47	+152.3	8.03	16:55	6

Total Purged: 6L Final DTW: 8.03 Total Drawdown: 0.09

Purge Pumping Rate (approx. mL/m): .24M Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 Time Sampled: 16:55
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-14SL-20080315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW 13-15S

Field Personnel: JVG / WJM **Date:** 3/15/18
Weather Conditions: P. clear **Approx. Air Temp (F):** ~60

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel RVC CPVC Other: Casing Diameter (in.): 24

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 6:38 Depth to Water (TOC - ft.): 6.38
Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
11.09	7.26	3595	2.3	0.96	+211.6	6.40	15:50	cell
10.69	7.22	3610	1.0	0.93	+203.3	6.56	16:00	4
10.69	7.23	3606	1.0	0.92	+202.9	6.56	16:05	5
10.69	7.23	3604	1.0	0.92	+20	6.56	16:10	6

Total Purged: 6L Final DTW: 6.56 Total Drawdown: 0.16

Purge Pumping Rate (approx. mL/m): 1 L/M Approx. Pump/Intake Depth: ~~[illegible]~~ screen
Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 Time Sampled: 16:10
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-15S-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW13-163

Field Personnel: JVG / WIM **Date:** 3/21/18
Weather Conditions: P. Clear **Approx. Air Temp (F):** 50

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other: Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: Depth to Water (TOC - ft.):
Depth Well Bottom (TOC - ft.):

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
14.88	7.98	596	3.7	134.3	+188.2	34.31	10:15	cell
14.92	7.82	543	2.4	39.4	+179.6	34.45	10:35	4
14.92	7.79	547	2.2	40.6	+179.5	34.45	10:40	5
14.96	7.85	547	2.2	40.1	+178.1	34.44	10:45	6
				134.3	int turb			

Total Purged: 6L Final DTW: 34.44 Total Drawdown: 0.13

Purge Pumping Rate (approx. mL/m): Approx. Pump/Intake Depth:
Well Yield: High / Moderate / Low Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank
Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/21/18 7:00

Field Observations/Notes of Sampling Event: There was an obstruction in the well @ 36'. Had to use weights to get pump past problem. At first we thought it was tubing that had fallen down but after trying to determine this realized it was likely a seam that has deformed. cont.

SAMPLING INFORMATION / DATA

Date Sampled: 3/21/18 Time Sampled: 10:45
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW13-165-20180321	2	250/250 ml	Poly	NaOH/unpres.	Apex	NO	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	NO	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Sampler Signature: Date Signed: 3/21/18

cont - Also turbidity was very high due to our actions. Started work on well @ 8:45.

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-15-179L

Field Personnel: JVG / WSM
Date: 3/15/18
Weather Conditions: P. Clear
Approx. Air Temp (F): 60s

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs/Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 13:30
Depth to Water (TOC - ft.): 12.99
Depth Well Bottom (TOC - ft.): 319

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
17.10	7.42	683	11.4	5.85	+188.2	12.42	15:05	2
17.42	7.32	697	5.83	3.51	+211.4	12.49	15:25	4
17.42	7.34	697	5.83	3.51	+211.4	12.49	15:30	5
17.40	7.35	700	5.4	3.51	+211.4	12.49	15:35	6

Total Purged: 6L
Final DTW: 12.49
Total Drawdown: 0.67

Purge Pumping Rate (approx. mL/m): 324/m
Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low
Sampling Technique: low-flow / low-yield
Purge/Sampling Method: Disposable Bailer / Peristaltic Pump / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18
Time Sampled: 15:35
QA/QC Sample (circle one): DUP #2 Lab MS/MSD Equip Blank Trip Blank None

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW15-179L-20180315	2	250/250 ml	Poly	NaOH/unpres	Apex	Dup 2	Total CN (335.4); WAD CN (SM4500)
	1	500 ml	Poly	None	Apex		Fluoride (SW846-9056); Sulfate (300.0)
Dup02-20180315	3	↓	↓	↓	↓	↓	↓
"	1	↓	↓	↓	↓	↓	↓

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/NO If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier Amec FW Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gaches Sampler Signature: Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW-15-18P

Field Personnel: JVG/WJM **Date:** 3/15/18

Weather Conditions: clear **Approx. Air Temp (F):** ~50

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other: | Casing Diameter (in.): 2"

Casing Condition: (OK) / NA / Needs Repairs/Repaired | Lock Condition: OK / NA / Needs Repairs / Replaced

Cap Condition: (OK) / NA / Needs Repairs/Repaired | Inner Casing Condition: (OK) / NA / Needs Repairs / Repaired

Paint Condition: (OK) / NA / Needs Repairs/Repaired | Monument Condition: (OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 2018-3-14 10:55 | Depth to Water (TOC - ft.): ~~7.62~~ 7.75

Depth Well Bottom (TOC - ft.): 18

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
12.36	7.74	403	7.2	4.85	+154.2	7.82	9:10	cell
12.78	7.15	393	6.8	0.77	+159.0	7.96	9:30	4
12.73	7.14	391	6.8	0.79	+158.5	7.96	9:35	5
12.74	7.14	391	6.5	0.79	+158.4	7.96	9:40	6

Total Purged: 6L | Final DTW: 7.96 | Total Drawdown: 0.14

Purge Pumping Rate (approx. mL/m): .24/M | Approx. Pump/Intake Depth: Screen

Well Yield: High / (Moderate) / Low | Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water | Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 | Instrument Calibration Date & Time: 3/15/18 7:00

Field Observations/Notes of Sampling Event: Fine black particulates in purge water

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18 | Time Sampled: 9:40

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW15-18P-20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES (NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: [signature] Date Signed: 3/15/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13

Monitoring Well ID: MW15-19S

Field Personnel: JVG/WSH **Date:** 3/14/18

Weather Conditions: Clear **Approx. Air Temp (F):** ~55

WELL CONDITION

Casing (circle one):	Stainless Steel Carbon Steel (PVC) CPVC Other:	Casing Diameter (in.):	2"
Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 Depth to Water (TOC - ft.): 12.09

Depth Well Bottom (TOC - ft.): N/A

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
15.82	7.78	503	3.7	5,80	+197.7	12.09	16:05	cell
15.77	7.68	500	2.9	0.91	+197.6	12.11	16:25	4
15.75	7.67	500	2.9	0.93	+199.9	12.11	16:30	5
15.72	7.67	500	2.9	0.91	+200.9	12.11	16:35	6

Total Purged: 6L Final DTW: 12.11 Total Drawdown: .02

Purge Pumping Rate (approx. mL/m): .2 L/M Approx. Pump/Intake Depth:

Well Yield: High / (Moderate) / Low N/A Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: (Disposable Bailer) / Peristaltic Pump / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time: 3/14/18

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/14/18 Time Sampled: 16:35

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW15-19S-20180	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex		Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.

Color change observed? YES/(NO) If YES, which strip?

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.

Sampler (Print): Jason Gardner Sampler Signature: Date Signed: 3/14/18

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

Lockheed Martin - The Dalles
Job #: 661M129556.13
Monitoring Well ID: MW15-20P

Field Personnel: JVG / WJM
Date: 3/15/18
Weather Conditions: Clear
Approx. Air Temp (F): ~40

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other:
Casing Diameter (in.): 2"

Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 3/14/18 10:43
Depth to Water (TOC - ft.): 13.76
Depth Well Bottom (TOC - ft.): 22

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L (mg/L)	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
12.43	7.82	326	1.4	8.34	+130.6	13.79	7:50	cell
13.06	7.63	326	0.9	7.18	+116.7	13.86	8:10	4
13.01	7.63	326	0.9	7.15	+119.7	13.86	8:15	5
13.02	7.63	326	0.9	7.20	+117.6	13.86	8:20	6

Total Purged: 6L
Final DTW: 13.86
Total Drawdown: 0.7

Purge Pumping Rate (approx. mL/m): ~2L/m
Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / (Low)
Sampling Technique: (low-flow) / low-yield
Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =
Decontamination Method: Alconox /DI Water /DI Water
Water Disposal: Storage Tank
Instrument Type & Number: YSI 556
Instrument Calibration Date & Time: 3/15/18 7:08

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 3/15/18
Time Sampled: 8:20
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW15-20P20180315	2	250/250 ml	Poly	NaOH/unpres.	Apex	N/A	Total CN (335.4); WAD CN (SM4500)
"	1	500 ml	Poly	None	Apex	"	Fluoride (SW846-9056); Sulfate (300.0)

Field Testing

Cyanide interference testing: If color change is observed on either test strip **contact the PM immediately** as sample will require RUSH analysis.
Color change observed? YES/(NO) If YES, which strip?
All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO
Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec Foster Wheeler sampler states that the information provided on this page is accurate.
Sampler (Print): Jason Gardner
Sampler Signature:
Date Signed: 3/15/18

APPENDIX D

Laboratory Reports

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, October 6, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556

Enclosed are the results of analyses for work order A7I0899, which was received by the laboratory on 9/29/2017 at 2:30:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Mid-Eff-20170929	A7I0899-01	Water	09/29/17 10:30	09/29/17 14:30

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Mid-Eff-20170929 (A7I0899-01)			**Matrix: Water**		**Batch: 7100470**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	10/05/17 14:35	EPA 335.4	

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Mid-Eff-20170929 (A7I0899-01RE1)			**Matrix: Water**		**Batch: 7100468**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	10/05/17 15:19	SM 4500-CN (I/E)	

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7100470 - Method Prep: Aq							**Water**					
Blank (7100470-BLK1)					Prepared: 10/05/17 09:07		Analyzed: 10/05/17 14:09					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7100470-BS1)					Prepared: 10/05/17 09:07		Analyzed: 10/05/17 14:11					
EPA 335.4												
Cyanide, Total	0.266	0.00500	0.00500	mg/L	1	0.250	---	106	85-115%	---	---	

Apex Laboratories



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12232 S.W. Garden Place
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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7100468 - Method Prep: Aq									**Water**			
Blank (7100468-BLK2)					Prepared: 10/05/17 08:42		Analyzed: 10/05/17 15:15					
SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7100468-BS2)					Prepared: 10/05/17 08:42		Analyzed: 10/05/17 15:17					
SM 4500-CN (I/E)												
Cyanide, WAD	0.236	0.00500	0.00500	mg/L	1	0.250	---	94	85-115%	---	---	

Apex Laboratories



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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7100470							
A7I0899-01	Water	EPA 335.4	09/29/17 10:30	10/05/17 09:07	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7100468							
A7I0899-01RE1	Water	SM 4500-CN (I/E)	09/29/17 10:30	10/05/17 08:42	6mL/6mL	6mL/6mL	1.00

Apex Laboratories



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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Philip Nerenberg, Lab Director

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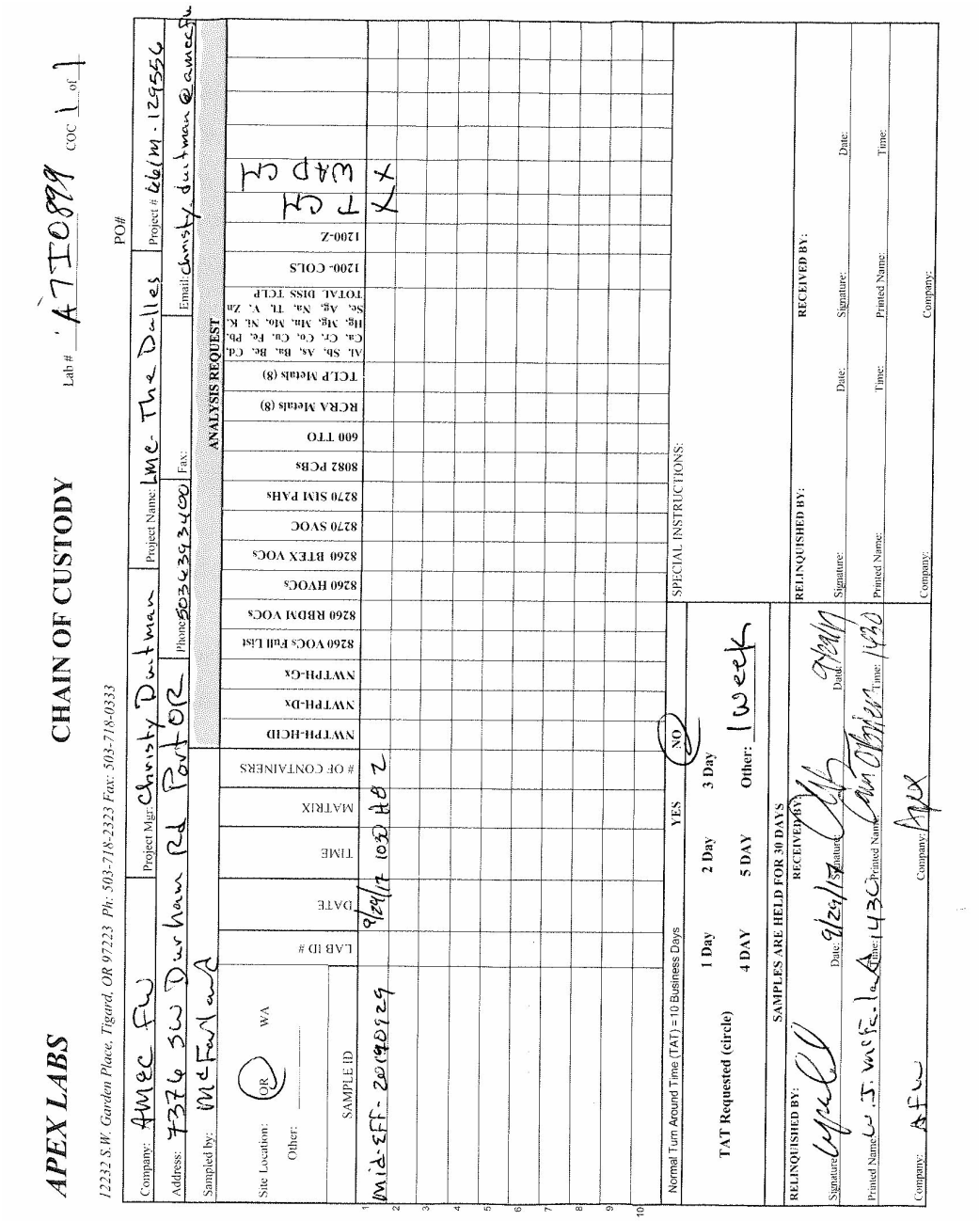
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/06/17 09:20

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A7 10899

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 9/29/17 @ 1430 By: CAS

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: CAS : 9/29/17 @ 1430

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.1	1.7					
Received on Ice? (Y/N)	Y	Y					
Temp. Blanks? (Y/N)	Y 4.3						
Ice Type: (Gel/Real/Other)	Real	Real					
Condition:							

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KM : 9/29/17 @ 1440

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes X No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___ NA___

Comments:

Additional Information:

Labeled by: KM Witness: VV Cooler Inspected by: KM See Project Contact Form: Y

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Wednesday, October 25, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M-129556-01

Enclosed are the results of analyses for work order A7J0512, which was received by the laboratory on 10/17/2017 at 4:35:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MIDEffluent_20171017	A7J0512-01	Water	10/17/17 10:30	10/17/17 16:35
Effluent_20171017	A7J0512-02	Water	10/17/17 10:35	10/17/17 16:35

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MIDEffluent_20171017 (A7J0512-01)			**Matrix: Water**		**Batch: 7101075**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	10/24/17 11:12	EPA 335.4	
Effluent_20171017 (A7J0512-02)			**Matrix: Water**		**Batch: 7101075**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	10/24/17 11:14	EPA 335.4	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MIDEffluent_20171017 (A7J0512-01)			**Matrix: Water**		**Batch: 7101103**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	10/24/17 14:55	SM 4500-CN (I/E)	
Effluent_20171017 (A7J0512-02)			**Matrix: Water**		**Batch: 7101103**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	10/24/17 15:01	SM 4500-CN (I/E)	

Apex Laboratories



Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7101075 - Method Prep: Aq									Water			
Blank (7101075-BLK1)					Prepared: 10/24/17 07:44		Analyzed: 10/24/17 10:32					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7101075-BS1)					Prepared: 10/24/17 07:44		Analyzed: 10/24/17 10:34					
EPA 335.4												
Cyanide, Total	0.262	0.00500	0.00500	mg/L	1	0.250	---	105	85-115%	---	---	
Duplicate (7101075-DUP3)					Prepared: 10/24/17 07:44		Analyzed: 10/24/17 12:29					
QC Source Sample: Effluent_20171017 (A7J0512-02)												
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (7101075-MS4)					Prepared: 10/24/17 07:44		Analyzed: 10/24/17 12:17					
QC Source Sample: Effluent_20171017 (A7J0512-02)												
EPA 335.4												
Cyanide, Total	0.264	0.00500	0.00500	mg/L	1	0.250	ND	105	80-120%	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7101103 - Method Prep: Aq									Water			
Blank (7101103-BLK1)					Prepared: 10/24/17 12:13		Analyzed: 10/24/17 14:51					
SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7101103-BS1)					Prepared: 10/24/17 12:13		Analyzed: 10/24/17 14:53					
SM 4500-CN (I/E)												
Cyanide, WAD	0.261	0.00500	0.00500	mg/L	1	0.250	---	104	85-115%	---	---	
Duplicate (7101103-DUP1)					Prepared: 10/24/17 12:13		Analyzed: 10/24/17 14:57					
QC Source Sample: MIDEffluent_20171017 (A7J0512-01)												
SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (7101103-MS1)					Prepared: 10/24/17 12:13		Analyzed: 10/24/17 14:59					
QC Source Sample: MIDEffluent_20171017 (A7J0512-01)												
SM 4500-CN (I/E)												
Cyanide, WAD	0.263	0.00500	0.00500	mg/L	1	0.250	ND	105	80-120%	---	---	

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7101075							
A7J0512-01	Water	EPA 335.4	10/17/17 10:30	10/24/17 07:44	6mL/6mL	6mL/6mL	1.00
A7J0512-02	Water	EPA 335.4	10/17/17 10:35	10/24/17 07:44	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7101103							
A7J0512-01	Water	SM 4500-CN (I/E)	10/17/17 10:30	10/24/17 12:13	6mL/6mL	6mL/6mL	1.00
A7J0512-02	Water	SM 4500-CN (I/E)	10/17/17 10:35	10/24/17 12:13	6mL/6mL	6mL/6mL	1.00

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

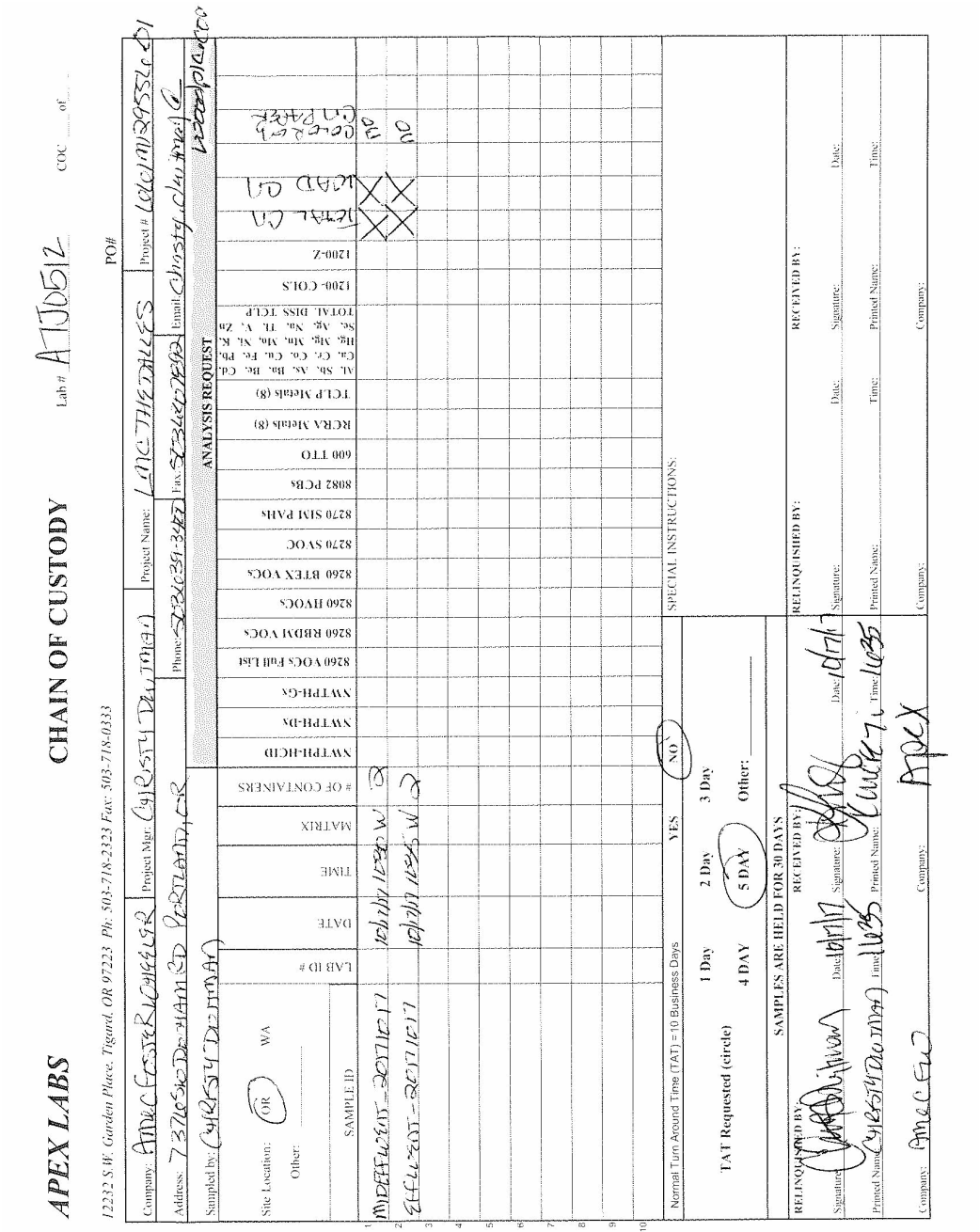
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/25/17 12:09

APEX LABS COOLER RECEIPT FORM

Client: AMEC Element WO#: A7 J0512

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 10/7/17 @ 1635 By: KAL

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: KAL : 10/7/17 @ 1635

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.2						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:							

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KAL : 10/7/17 @ 1640

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes X No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___ NA___

Comments:

Additional Information:

Labeled by: JS Witness: Cooler Inspected by: KAL See Project Contact Form: Y

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323 Phone
503-718-0333 Fax

Saturday, December 2, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.01

Enclosed are the results of analyses for work order A7K0665, which was received by the laboratory on 11/17/2017 at 4:00:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MIDEFFLUENT_20171117	A7K0665-01	Water	11/17/17 12:40	11/17/17 16:00
EFFLUENT_20171117	A7K0665-02	Water	11/17/17 12:45	11/17/17 16:00

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MIDEFFLUENT_20171117 (A7K0665-01)			**Matrix: Water**		**Batch: 7110899**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	11/20/17 14:22	EPA 335.4	
EFFLUENT_20171117 (A7K0665-02)			**Matrix: Water**		**Batch: 7110899**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	11/20/17 14:30	EPA 335.4	

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Philip Nerenberg, Lab Director

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MIDEFFLUENT_20171117 (A7K0665-01)			**Matrix: Water**		**Batch: 7110897**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	11/20/17 12:54	SM 4500-CN (I/E)	
EFFLUENT_20171117 (A7K0665-02)			**Matrix: Water**		**Batch: 7110897**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	11/20/17 12:56	SM 4500-CN (I/E)	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110899 - Method Prep: Aq									Water			
Blank (7110899-BLK1)					Prepared: 11/20/17 09:04		Analyzed: 11/20/17 13:56					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7110899-BS1)					Prepared: 11/20/17 09:04		Analyzed: 11/20/17 14:04					
EPA 335.4												
Cyanide, Total	0.263	0.00500	0.00500	mg/L	1	0.250	---	105	85-115%	---	---	

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110897 - Method Prep: Aq									Water			
Blank (7110897-BLK1)					Prepared: 11/20/17 08:59		Analyzed: 11/20/17 12:20					
SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7110897-BS1)					Prepared: 11/20/17 08:59		Analyzed: 11/20/17 12:22					
SM 4500-CN (I/E)												
Cyanide, WAD	0.222	0.00500	0.00500	mg/L	1	0.250	---	89	85-115%	---	---	
Duplicate (7110897-DUP2)					Prepared: 11/20/17 08:59		Analyzed: 11/20/17 12:58					
QC Source Sample: EFFLUENT_20171117 (A7K0665-02)												
SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (7110897-MS2)					Prepared: 11/20/17 08:59		Analyzed: 11/20/17 13:00					
QC Source Sample: EFFLUENT_20171117 (A7K0665-02)												
SM 4500-CN (I/E)												
Cyanide, WAD	0.221	0.00500	0.00500	mg/L	1	0.250	ND	88	80-120%	---	---	

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110899							
A7K0665-01	Water	EPA 335.4	11/17/17 12:40	11/20/17 09:04	6mL/6mL	6mL/6mL	1.00
A7K0665-02	Water	EPA 335.4	11/17/17 12:45	11/20/17 09:04	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110897							
A7K0665-01	Water	SM 4500-CN (I/E)	11/17/17 12:40	11/20/17 08:59	6mL/6mL	6mL/6mL	1.00
A7K0665-02	Water	SM 4500-CN (I/E)	11/17/17 12:45	11/20/17 08:59	6mL/6mL	6mL/6mL	1.00

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
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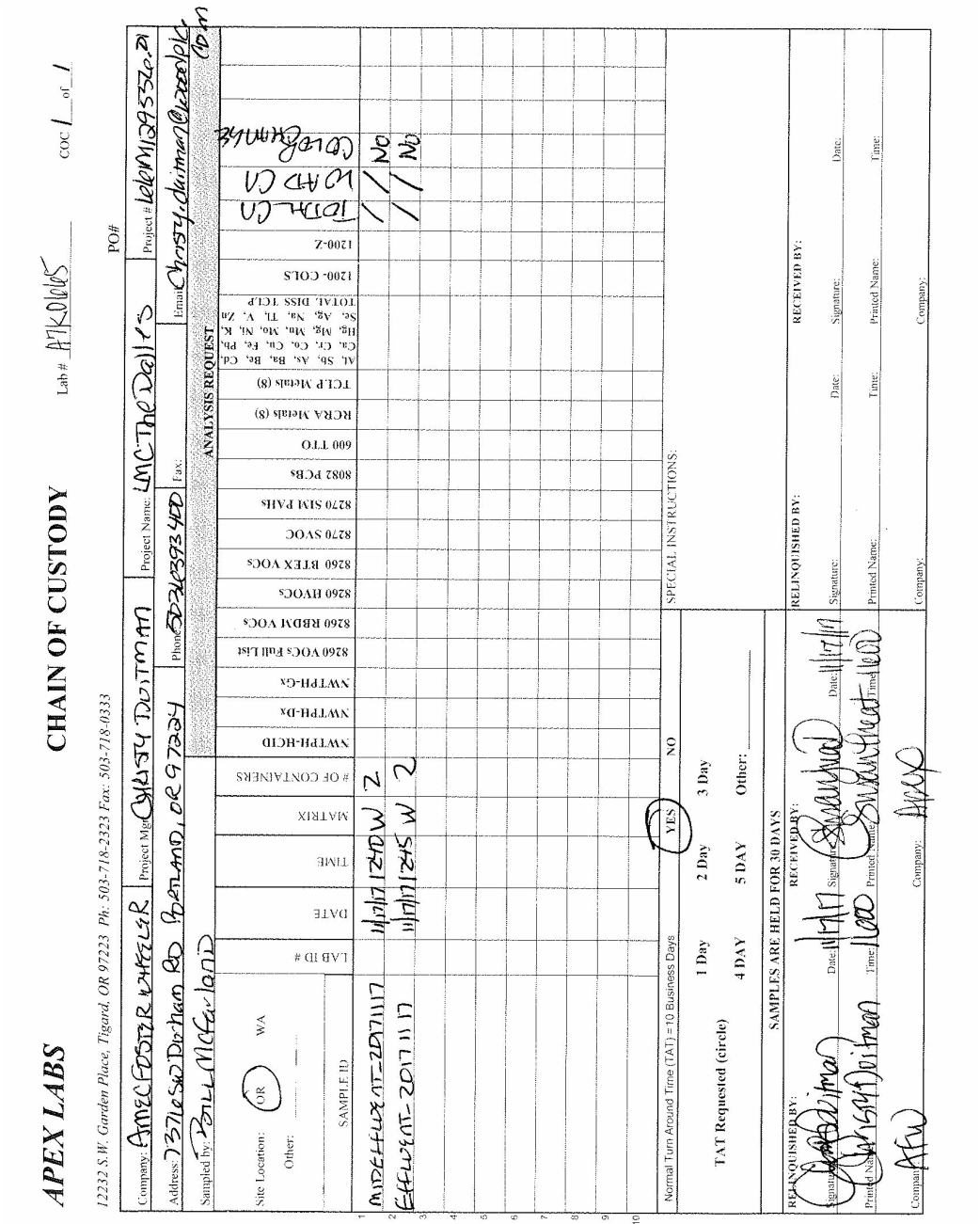
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/02/17 19:33

APEX LABS COOLER RECEIPT FORM

Client: Amec FW Element WO#: A7K0665

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 11/17/17 @ 1600 By: (8)

Delivered by: Apex___Client ✓ ESS___FedEx___UPS___Swift___Senvoy___SDS___Other_____

Cooler Inspection Inspected by: (8) : 11/17/17 @ 1600 ✓

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes_____ No ✓

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)		0.3					
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	5.3						
Ice Type: (Gel/Real/Other)							
Condition:							

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: (8) : 11/18/17 @ 1100

All Samples Intact? Yes ✓ No ___ Comments:

Bottle Labels/COCs agree? Yes ___ No ✓ Comments: UP poly Mideffluent - 20171117 reads D of 11/17/11, NaOH poly Effluent - 20171117 reads D of 11/17/11

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA ✓

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No ___ NA _____

Comments:

Additional Information:

Labeled by: (8) Witness: Cooler Inspected by: ? See Project Contact Form: Y

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, December 26, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 6611M129556-01

Enclosed are the results of analyses for work order A7L0209, which was received by the laboratory on 12/8/2017 at 9:50:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Resin-20171206	A7L0209-01	Solid	12/06/17 12:00	12/08/17 09:50

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Non-AqueousWater Leach)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Resin-20171206 (A7L0209-01)			**Matrix: Solid**		**Batch: 7120853**			
Cyanide, Total	**524**	9.80	9.80	mg/kg	100	12/20/17 13:10	EPA 9013M/9014	

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Non-aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Resin-20171206 (A7L0209-01)			**Matrix: Solid**		**Batch: 7120854**			
Cyanide, WAD	**7.49**	0.245	0.245	mg/kg	1	12/22/17 11:21	EPA 9013M/SM 4500-CN (I/E)	

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Non-AqueousWater Leach)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120853 - Method Prep: Non-Aq									Solid			
Blank (7120853-BLK1)					Prepared: 12/19/17 09:25		Analyzed: 12/20/17 13:06					
EPA 9013M/9014												
Cyanide, Total	ND	0.100	0.100	mg/kg	1	---	---	---	---	---	---	
LCS (7120853-BS1)					Prepared: 12/19/17 09:25		Analyzed: 12/20/17 13:08					
EPA 9013M/9014												
Cyanide, Total	3.76	0.100	0.100	mg/kg	1	4.00	---	94	85-115%	---	---	
Duplicate (7120853-DUP1)					Prepared: 12/19/17 09:25		Analyzed: 12/20/17 13:12					
QC Source Sample: Resin-20171206 (A7L0209-01)												
EPA 9013M/9014												
Cyanide, Total	**564**	9.93	9.93	mg/kg	100	---	524	---	---	7	10%	
Matrix Spike (7120853-MS1)					Prepared: 12/19/17 09:25		Analyzed: 12/20/17 13:14					
QC Source Sample: Resin-20171206 (A7L0209-01)												
EPA 9013M/9014												
Cyanide, Total	685	9.85	9.85	mg/kg	100	394	524	41	80-120%	---	---	Q-03

Apex Laboratories

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Non-aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120854 - Method Prep: Non-Aq									**Solid**			
Blank (7120854-BLK1)					Prepared: 12/19/17 09:26		Analyzed: 12/22/17 11:17					
EPA 9013M/SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.250	0.250	mg/kg	1	---	---	---	---	---	---	
LCS (7120854-BS1)					Prepared: 12/19/17 09:26		Analyzed: 12/22/17 11:19					
EPA 9013M/SM 4500-CN (I/E)												
Cyanide, WAD	3.51	0.250	0.250	mg/kg	1	4.00	---	88	85-115%	---	---	
Duplicate (7120854-DUP1)					Prepared: 12/19/17 09:26		Analyzed: 12/22/17 11:23					
QC Source Sample: Resin-20171206 (A7L0209-01)												
EPA 9013M/SM 4500-CN (I/E)												
Cyanide, WAD	**5.23**	0.248	0.248	mg/kg	1	---	7.49	---	---	36	10%	Q-04
Matrix Spike (7120854-MS1)					Prepared: 12/19/17 09:26		Analyzed: 12/22/17 11:25					
QC Source Sample: Resin-20171206 (A7L0209-01)												
EPA 9013M/SM 4500-CN (I/E)												
Cyanide, WAD	8.02	0.241	0.241	mg/kg	1	3.86	7.49	14	80-120%	---	---	Q-04

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Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Non-AqueousWater Leach)

Prep: Method Prep: Non-Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120853							
A7L0209-01	Solid	EPA 9013M/9014	12/06/17 12:00	12/19/17 09:25	2.5507g/50mL	2.5g/50mL	0.98

Cyanide - Weak Acid Dissociable (WAD) (Non-aqueous)

Prep: Method Prep: Non-Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120854							
A7L0209-01	Solid	EPA 9013M/SM 4500-CN (I/E)	12/06/17 12:00	12/19/17 09:26	2.5507g/50mL	2.5g/50mL	0.98

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03

Notes and Definitions

Qualifiers:

Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Philip Nerenberg, Lab Director

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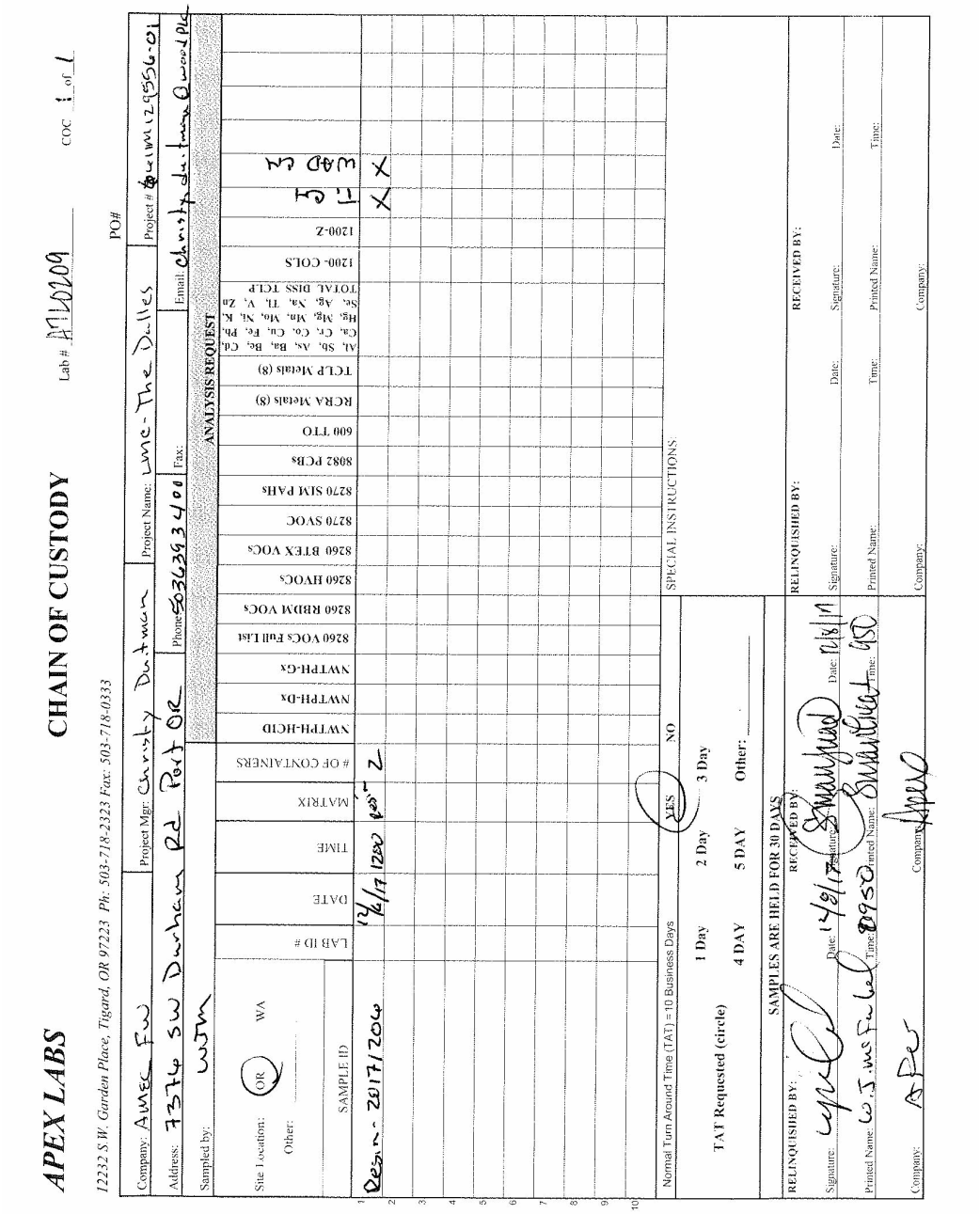
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03



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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 6611M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:03

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A7L0209

Project/Project #: LMC-The Dalles / 6611M129556.01

Delivery info:

Date/Time Received: 12/8/17 @ 950 By: ST

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: ST : 12/8/17 @

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.3						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: SC : 12/8/17 @ 950

All Samples Intact? Yes ✓ No___ Comments:

Bottle Labels/COCs agree? Yes ✓ No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA ✓

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes___ No___ NA ✓

Comments:

Additional Information:

Labeled by: SC Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, January 5, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.01

Enclosed are the results of analyses for work order A7L0523, which was received by the laboratory on 12/19/2017 at 9:35:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Mid-EFF-20171218	A7L0523-01	Water	12/18/17 14:10	12/19/17 09:35
EFF-20171218	A7L0523-02	Water	12/18/17 14:35	12/19/17 09:35

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Mid-EFF-20171218 (A7L0523-01)			**Matrix: Water**		**Batch: 7121023**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	12/26/17 13:00	EPA 335.4	
EFF-20171218 (A7L0523-02)			**Matrix: Water**		**Batch: 7121023**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	12/26/17 13:02	EPA 335.4	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Mid-EFF-20171218 (A7L0523-01RE1)			**Matrix: Water**		**Batch: 7121004**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	12/22/17 13:18	SM 4500-CN (I/E)	
EFF-20171218 (A7L0523-02RE1)			**Matrix: Water**		**Batch: 7121004**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	12/22/17 13:20	SM 4500-CN (I/E)	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7121023 - Method Prep: Aq							**Water**					
Blank (7121023-BLK1)					Prepared: 12/26/17 10:23		Analyzed: 12/26/17 12:34					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7121023-BS1)					Prepared: 12/26/17 10:23		Analyzed: 12/26/17 12:36					
EPA 335.4												
Cyanide, Total	0.231	0.00500	0.00500	mg/L	1	0.250	---	92	85-115%	---	---	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7121004 - Method Prep: Aq									Water			
Blank (7121004-BLK2)					Prepared: 12/22/17 08:39		Analyzed: 12/22/17 12:52					
SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7121004-BS2)					Prepared: 12/22/17 08:39		Analyzed: 12/22/17 12:54					
SM 4500-CN (I/E)												
Cyanide, WAD	0.225	0.00500	0.00500	mg/L	1	0.250	---	90	85-115%	---	---	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7121023							
A7L0523-01	Water	EPA 335.4	12/18/17 14:10	12/26/17 10:23	6mL/6mL	6mL/6mL	1.00
A7L0523-02	Water	EPA 335.4	12/18/17 14:35	12/26/17 10:23	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7121004							
A7L0523-01RE1	Water	SM 4500-CN (I/E)	12/18/17 14:10	12/22/17 08:39	6mL/6mL	6mL/6mL	1.00
A7L0523-02RE1	Water	SM 4500-CN (I/E)	12/18/17 14:35	12/22/17 08:39	6mL/6mL	6mL/6mL	1.00

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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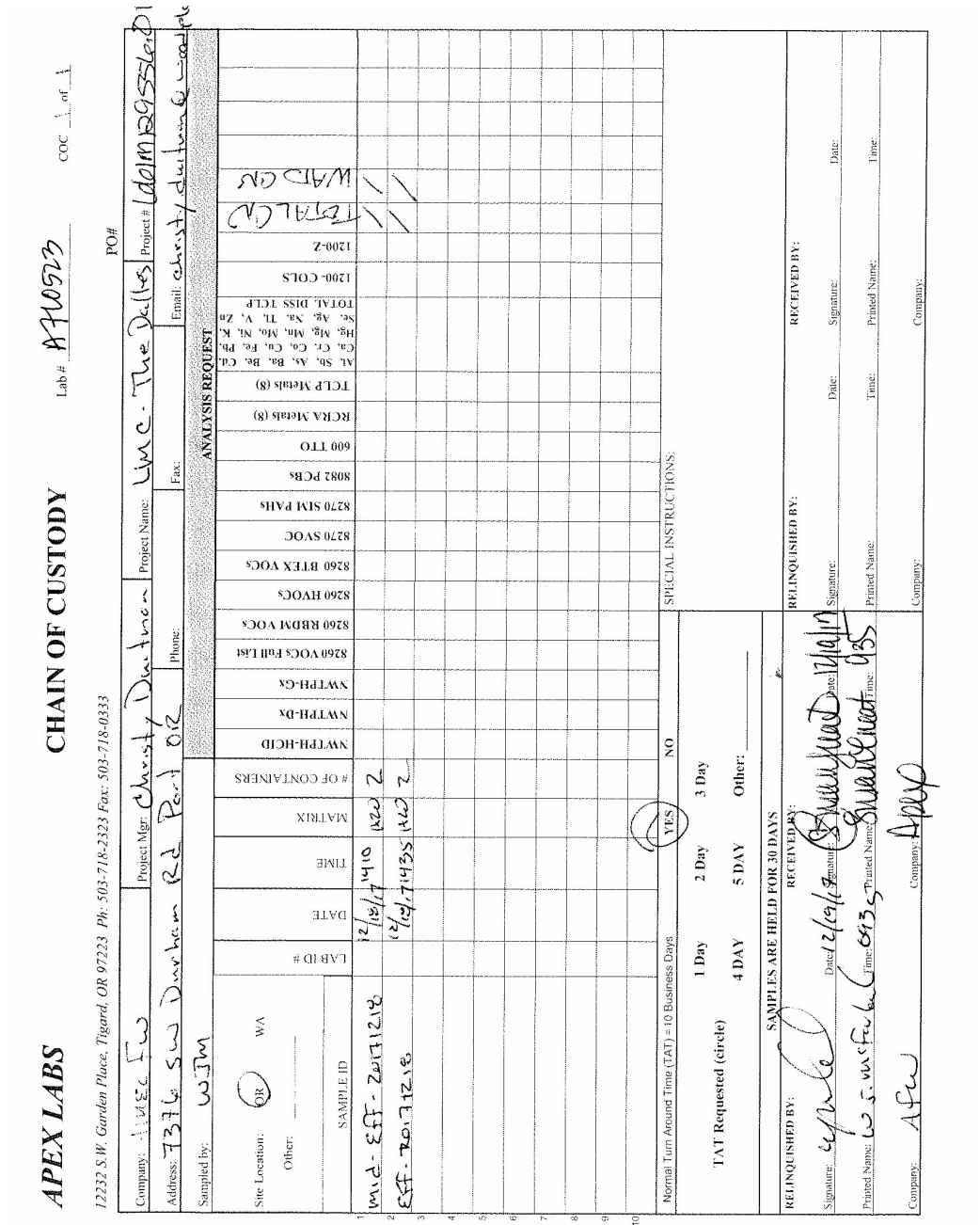
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54



APEX LABS **CHAIN OF CUSTODY** Lab # A710523 COC 1 of 1

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: AMEC FW | Project Mgr: Christy Duitman | Project Name: LMC - The Dalles | Project # 661M129556.01

Address: 7376 SW Durham Rd Port OR | Phone: | Fax: | Email: christy.duitman@wsp.com | PO#

Sampled by: WJM

Site Location: OR WA
Other: ____

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TOTAL DISS TCLP	1200-COLS	1200-Z	TOTAL CN	WAD CN
1	mid-EFF-20171218		12/18/17	1410	H2O	2																			
2	EFF-20171218		12/18/17	1435	H2O	2																			
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle) 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Date: 12/19/17 Signature: [signature] Date: 12/19/17	Signature:	Date: Signature: Date:
Printed Name: W.J. McFarlane	Time: 0935 Printed Name: Swan Creek Time: 935	Printed Name:	Time: Printed Name: Time:
Company: AFW	Company: Apex	Company:	Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:54

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A7 [illegible]0523

Project/Project #: LMC The Dalles 661M129556.01

Delivery info:

Date/Time Received: 12/19/17 @ 935 By: [illegible]

Delivered by: Apex___ Client ✓ ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: [illegible] : 12/19/17 @ 935

Chain of Custody Included? Yes ✓ No___ Custody Seals? Yes___ No ✓

Signed/Dated by Client? Yes ✓ No___

Signed/Dated by Apex? Yes ✓ No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.3						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: [illegible] : 12/19/17 @ 1210

All Samples Intact? Yes ✓ No___ Comments:

Bottle Labels/COCs agree? Yes ✓ No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA ✓

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No___ NA___

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, January 25, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.01

Enclosed are the results of analyses for work order A8A0400, which was received by the laboratory on 1/15/2018 at 4:30:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MidEff_20180115	A8A0400-01	Water	01/15/18 13:00	01/15/18 16:30
Eff_20180115	A8A0400-02	Water	01/15/18 13:05	01/15/18 16:30

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MidEff_20180115 (A8A0400-01RE1)			**Matrix: Water**		**Batch: 8010727**			
Cyanide, Total	**1.88**	0.0500	0.0500	mg/L	10	01/17/18 11:30	EPA 335.4	
Eff_20180115 (A8A0400-02)			**Matrix: Water**		**Batch: 8010727**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	01/17/18 11:04	EPA 335.4	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MidEff_20180115 (A8A0400-01)			**Matrix: Water**		**Batch: 8010729**			
Cyanide, WAD	**0.0517**	0.00500	0.00500	mg/L	1	01/17/18 11:14	SM 4500-CN (I/E)	
Eff_20180115 (A8A0400-02)			**Matrix: Water**		**Batch: 8010729**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	01/17/18 11:20	SM 4500-CN (I/E)	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8010727 - Method Prep: Aq									Water			
Blank (8010727-BLK1)					Prepared: 01/16/18 13:09		Analyzed: 01/17/18 10:38					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8010727-BS1)					Prepared: 01/16/18 13:09		Analyzed: 01/17/18 10:40					
EPA 335.4												
Cyanide, Total	0.252	0.00500	0.00500	mg/L	1	0.250	---	101	85-115%	---	---	

Apex Laboratories



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7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8010729 - Method Prep: Aq									Water			
Blank (8010729-BLK1)					Prepared: 01/16/18 13:13		Analyzed: 01/17/18 11:10					
SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8010729-BS1)					Prepared: 01/16/18 13:13		Analyzed: 01/17/18 11:12					
SM 4500-CN (I/E)												
Cyanide, WAD	0.253	0.00500	0.00500	mg/L	1	0.250	---	101	85-115%	---	---	
Duplicate (8010729-DUP1)					Prepared: 01/16/18 13:13		Analyzed: 01/17/18 11:16					
QC Source Sample: MidEff_20180115 (A8A0400-01)												
SM 4500-CN (I/E)												
Cyanide, WAD	**0.0226**	0.00500	0.00500	mg/L	1	---	0.0517	---	---	78	10%	Q-17
Matrix Spike (8010729-MS1)					Prepared: 01/16/18 13:13		Analyzed: 01/17/18 11:18					
QC Source Sample: MidEff_20180115 (A8A0400-01)												
SM 4500-CN (I/E)												
Cyanide, WAD	0.299	0.00500	0.00500	mg/L	1	0.250	0.0517	99	80-120%	---	---	

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7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8010727							
A8A0400-01RE1	Water	EPA 335.4	01/15/18 13:00	01/16/18 13:09	6mL/6mL	6mL/6mL	1.00
A8A0400-02	Water	EPA 335.4	01/15/18 13:05	01/16/18 13:09	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8010729							
A8A0400-01	Water	SM 4500-CN (I/E)	01/15/18 13:00	01/16/18 13:13	6mL/6mL	6mL/6mL	1.00
A8A0400-02	Water	SM 4500-CN (I/E)	01/15/18 13:05	01/16/18 13:13	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42

Notes and Definitions

Qualifiers:

Q-17	RPD between original and duplicate sample is outside of established control limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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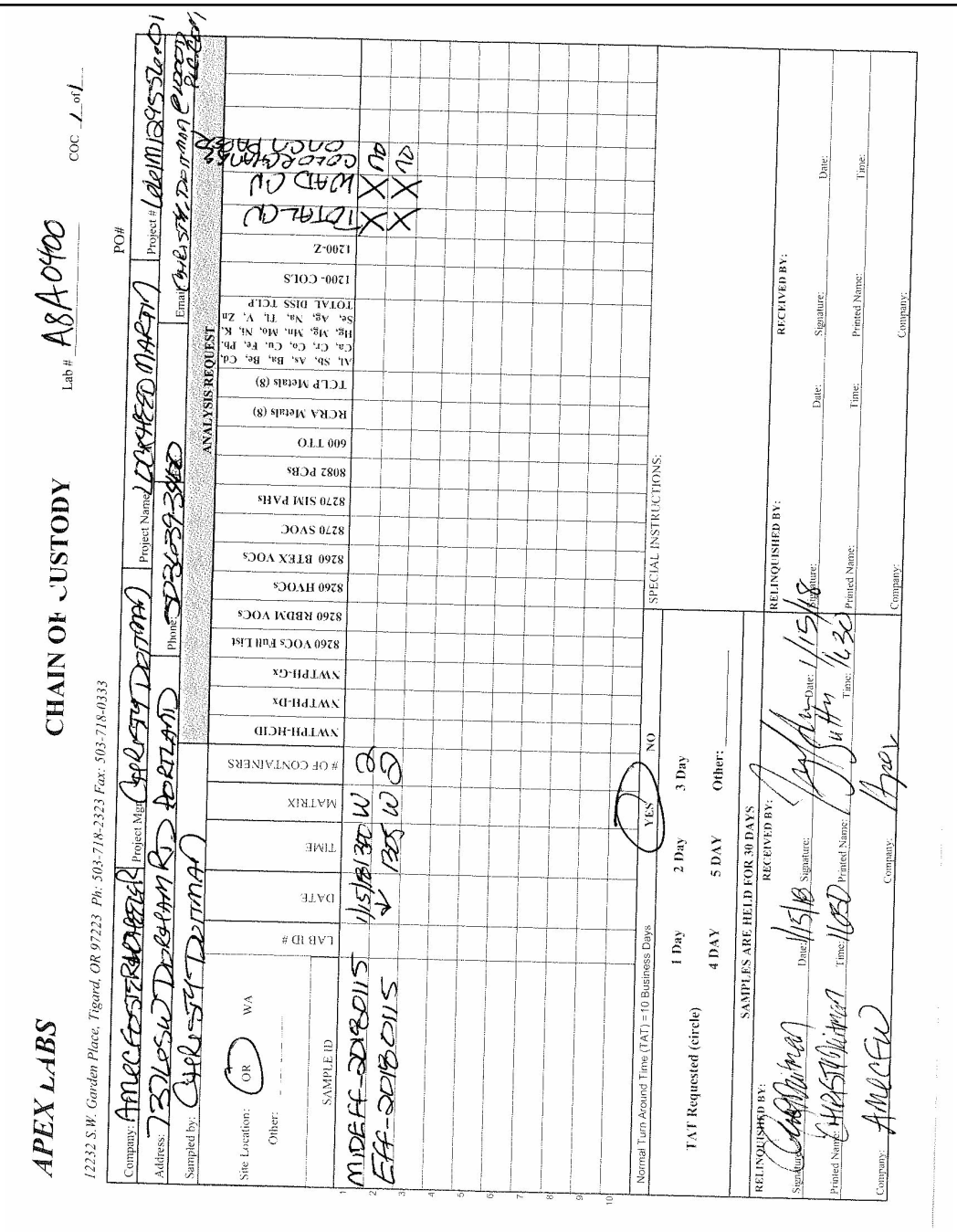
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42



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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:42

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A8 A0400

Project/Project #: Lockheed Martin

Delivery info:

Date/Time Received: 1/15/18 @ 1630 By: JS

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: JS : 1/15/18 @ 1631

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.0						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KM : 1/15/18 @ 1540

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes X No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No ___ NA ___

Comments:

Additional Information:

Labeled by: AB Witness: KM Cooler Inspected by: KM See Project Contact Form: Y

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503-718-0333 Fax

Tuesday, February 13, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 761M129556-01

Enclosed are the results of analyses for work order A8B0010, which was received by the laboratory on 2/1/2018 at 10:47:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Eff-20180131	A8B0010-01	Water	01/31/18 10:35	02/01/18 10:47
Mid-Eff-20180131	A8B0010-02	Water	01/31/18 10:45	02/01/18 10:47

Apex Laboratories

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Eff-20180131 (A8B0010-01RE1)			**Matrix: Water**		**Batch: 8020520**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	02/08/18 15:47	EPA 335.4	
Mid-Eff-20180131 (A8B0010-02RE1)			**Matrix: Water**		**Batch: 8020520**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	02/08/18 15:49	EPA 335.4	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Eff-20180131 (A8B0010-01RE1)			**Matrix: Water**		**Batch: 8020455**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	02/07/18 16:47	SM 4500-CN I	
Mid-Eff-20180131 (A8B0010-02RE1)			**Matrix: Water**		**Batch: 8020455**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	02/07/18 16:53	SM 4500-CN I	

Apex Laboratories

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020520 - Method Prep: Aq									Water			
Blank (8020520-BLK2)					Prepared: 02/08/18 11:32		Analyzed: 02/08/18 15:31					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8020520-BS1)					Prepared: 02/08/18 11:32		Analyzed: 02/08/18 15:29					
EPA 335.4												
Cyanide, Total	0.241	0.00500	0.00500	mg/L	1	0.250	---	97	85-115%	---	---	

Apex Laboratories



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7376 SW Durham Road	Project Number: 761M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020455 - Method Prep: Aq									Water			
Blank (8020455-BLK1)					Prepared: 02/07/18 08:43		Analyzed: 02/07/18 16:41					
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8020455-BS1)					Prepared: 02/07/18 08:43		Analyzed: 02/07/18 16:43					
SM 4500-CN I												
Cyanide, WAD	0.220	0.00500	0.00500	mg/L	1	0.250	---	88	85-115%	---	---	
Duplicate (8020455-DUP1)					Prepared: 02/07/18 08:43		Analyzed: 02/07/18 16:49					
QC Source Sample: Eff-20180131 (A8B0010-01RE1)												
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (8020455-MS1)					Prepared: 02/07/18 08:43		Analyzed: 02/07/18 16:51					
QC Source Sample: Eff-20180131 (A8B0010-01RE1)												
SM 4500-CN I												
Cyanide, WAD	0.251	0.00500	0.00500	mg/L	1	0.250	ND	101	80-120%	---	---	

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7376 SW Durham Road	Project Number: 761M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020520							
A8B0010-01RE1	Water	EPA 335.4	01/31/18 10:35	02/08/18 11:32	6mL/6mL	6mL/6mL	1.00
A8B0010-02RE1	Water	EPA 335.4	01/31/18 10:45	02/08/18 11:32	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020455							
A8B0010-01RE1	Water	SM 4500-CN I	01/31/18 10:35	02/07/18 08:43	6mL/6mL	6mL/6mL	1.00
A8B0010-02RE1	Water	SM 4500-CN I	01/31/18 10:45	02/07/18 08:43	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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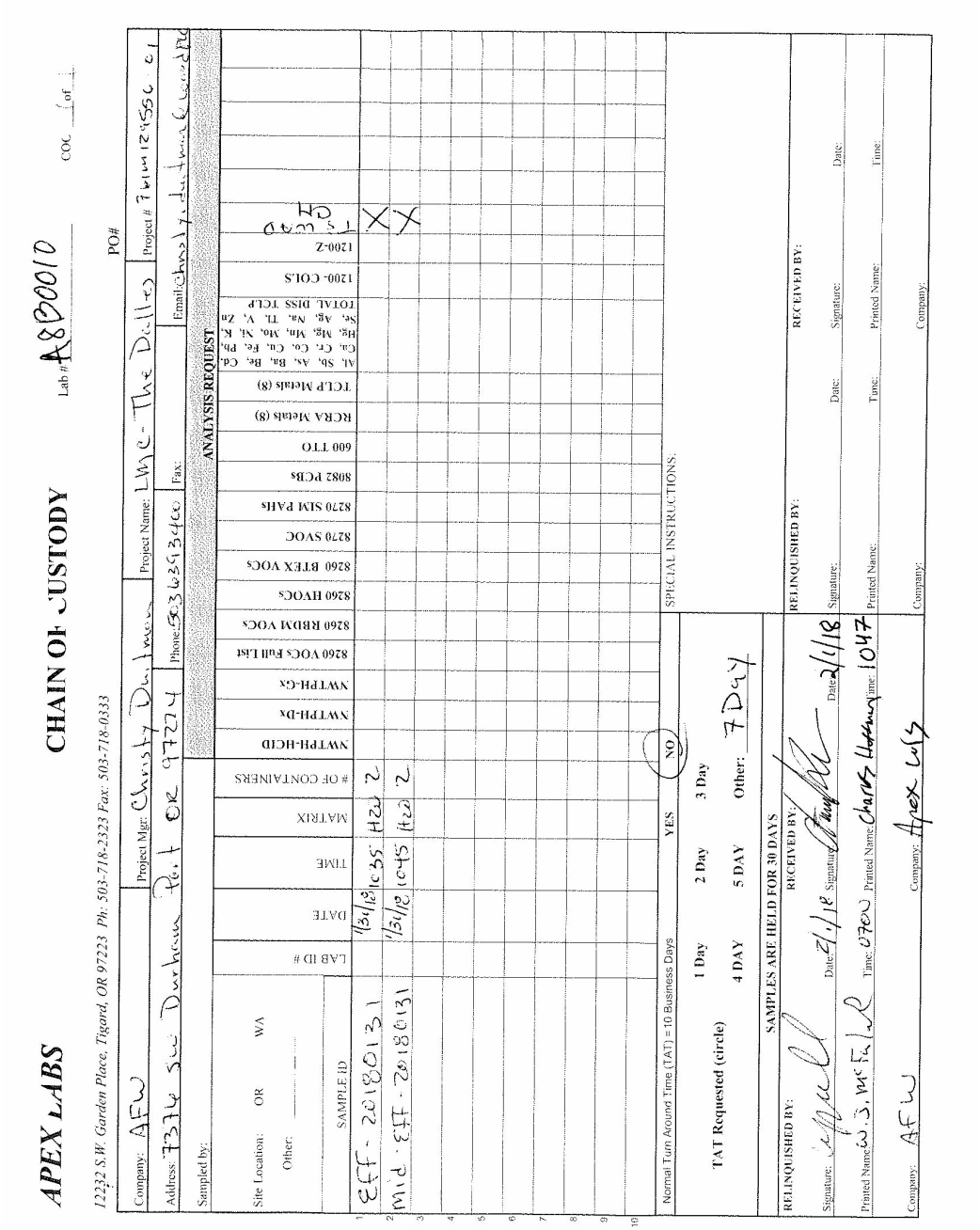
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04



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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/13/18 11:04

APEX LABS COOLER RECEIPT FORM

Client: AFW Element WO#: A8 B0010

Project/Project #: LMC-The Dalles 761M129556-01

Delivery info:

Date/Time Received: 2/1/18 @ 1047 By: CF-H

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: CF-H : 2/1/18 @ 1105

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No ___

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)							
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	1.7						
Ice Type: (Gel/Real/Other)							
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: ___ : 2/1/18 @ 1100

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes X No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No ___ NA ___

Comments:

Additional Information:

Labeled by: ah Witness: ___ Cooler Inspected by: COB See Project Contact Form: Y

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, March 8, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556

Enclosed are the results of analyses for work order A8B0609, which was received by the laboratory on 2/23/2018 at 12:50:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Eff-20180222	A8B0609-01	Water	02/22/18 15:10	02/23/18 12:50
Mid-Eff-20180222	A8B0609-02	Water	02/22/18 15:00	02/23/18 12:50

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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Eff-20180222 (A8B0609-01)			**Matrix: Water**		**Batch: 8020983**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	02/26/18 12:06	EPA 335.4	
Mid-Eff-20180222 (A8B0609-02)			**Matrix: Water**		**Batch: 8020983**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	02/26/18 12:08	EPA 335.4	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Eff-20180222 (A8B0609-01)			**Matrix: Water**		**Batch: 8020984**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	02/26/18 12:14	SM 4500-CN I	
Mid-Eff-20180222 (A8B0609-02)			**Matrix: Water**		**Batch: 8020984**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	02/26/18 12:26	SM 4500-CN I	

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503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020983 - Method Prep: Aq									Water			
Blank (8020983-BLK1)					Prepared: 02/26/18 09:55		Analyzed: 02/26/18 11:56					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8020983-BS1)					Prepared: 02/26/18 09:55		Analyzed: 02/26/18 11:58					
EPA 335.4												
Cyanide, Total	0.242	0.00500	0.00500	mg/L	1	0.250	---	97	85-115%	---	---	

Apex Laboratories



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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020984 - Method Prep: Aq							**Water**					
Blank (8020984-BLK1)					Prepared: 02/26/18 09:57		Analyzed: 02/26/18 12:10					
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8020984-BS1)					Prepared: 02/26/18 09:57		Analyzed: 02/26/18 12:12					
SM 4500-CN I												
Cyanide, WAD	0.235	0.00500	0.00500	mg/L	1	0.250	---	94	85-115%	---	---	
Duplicate (8020984-DUP1)					Prepared: 02/26/18 09:57		Analyzed: 02/26/18 12:22					
QC Source Sample: Eff-20180222 (A8B0609-01)												
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (8020984-MS1)					Prepared: 02/26/18 09:57		Analyzed: 02/26/18 12:24					
QC Source Sample: Eff-20180222 (A8B0609-01)												
SM 4500-CN I												
Cyanide, WAD	0.216	0.00500	0.00500	mg/L	1	0.250	ND	86	80-120%	---	---	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020983							
A8B0609-01	Water	EPA 335.4	02/22/18 15:10	02/26/18 09:55	6mL/6mL	6mL/6mL	1.00
A8B0609-02	Water	EPA 335.4	02/22/18 15:00	02/26/18 09:55	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020984							
A8B0609-01	Water	SM 4500-CN I	02/22/18 15:10	02/26/18 09:57	6mL/6mL	6mL/6mL	1.00
A8B0609-02	Water	SM 4500-CN I	02/22/18 15:00	02/26/18 09:57	6mL/6mL	6mL/6mL	1.00

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Philip Nerenberg, Lab Director

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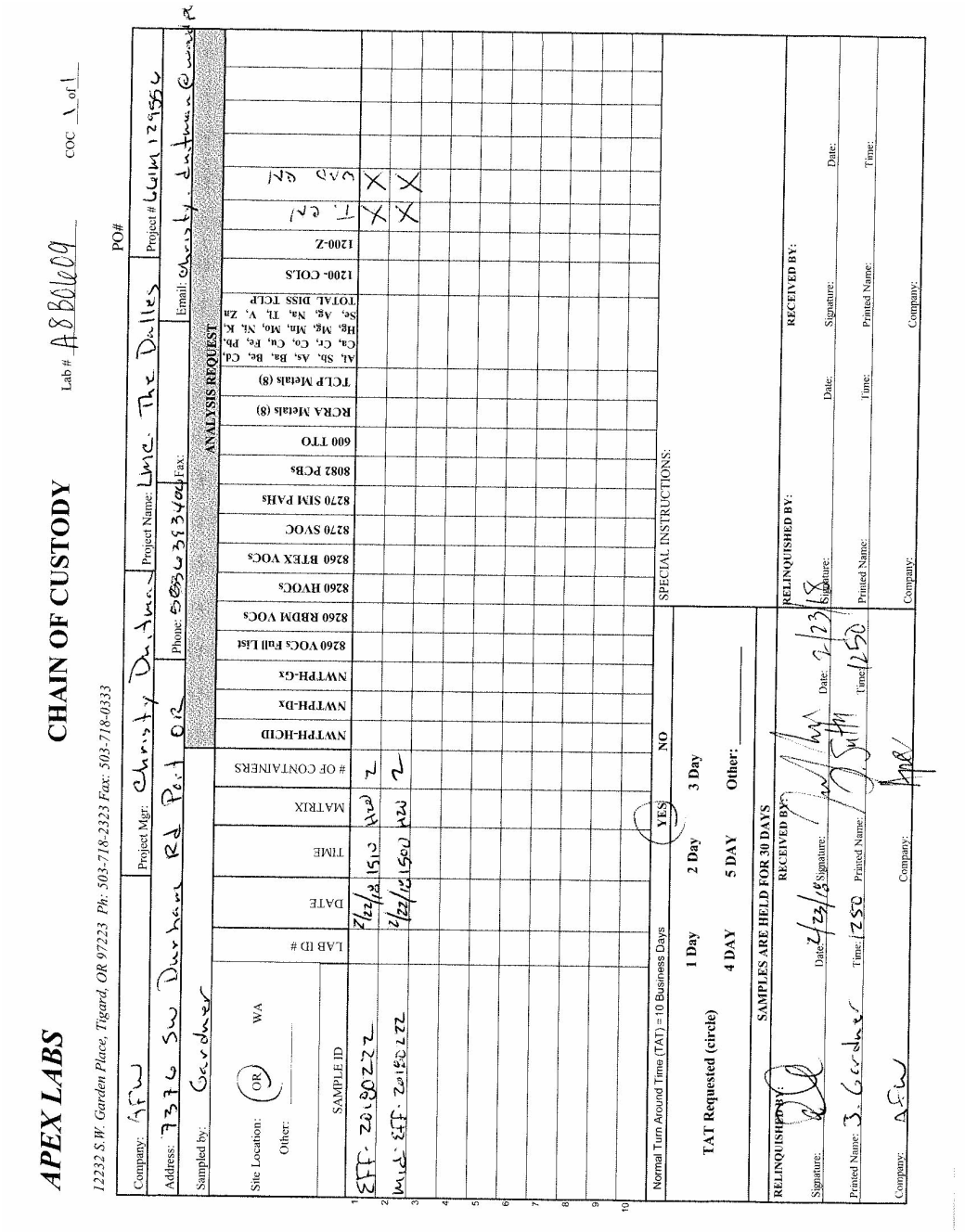
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51



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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/08/18 16:51

APEX LABS COOLER RECEIPT FORM

Client: AMEC Element WO#: ABBC1609

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 2/23/18 @ 1250 By: JS

Delivered by: Apex X Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Inspected by: JS : 2/23/18 @ 1535

Chain of Custody Included? Yes X No Custody Seals? Yes No X

Signed/Dated by Client? Yes X No

Signed/Dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	0.4						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: : 4/22/18 @ 1620

All Samples Intact? Yes ✓ No Comments:

Bottle Labels/COCs agree? Yes ✓ No Comments:

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No Comments:

Do VOA Vials have Visible Headspace? Yes No NA ✓

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No NA

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, March 27, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.01

Enclosed are the results of analyses for work order A8C0511, which was received by the laboratory on 3/14/2018 at 8:45:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
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503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Eff-20180313	A8C0511-01	Water	03/13/18 12:20	03/14/18 08:45
Mid-Eff-20180313	A8C0511-02	Water	03/13/18 12:30	03/14/18 08:45

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Eff-20180313 (A8C0511-01)			**Matrix: Water**		**Batch: 8030846**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/16/18 14:33	EPA 335.4	
Mid-Eff-20180313 (A8C0511-02RE1)			**Matrix: Water**		**Batch: 8030902**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 14:41	EPA 335.4	

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Eff-20180313 (A8C0511-01)			**Matrix: Water**		**Batch: 8030845**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/16/18 14:55	SM 4500-CN I	
Mid-Eff-20180313 (A8C0511-02)			**Matrix: Water**		**Batch: 8030845**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/16/18 14:57	SM 4500-CN I	

Apex Laboratories



Philip Nerenberg, Lab Director

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503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030846 - Method Prep: Aq									Water			
Blank (8030846-BLK1)					Prepared: 03/16/18 08:52		Analyzed: 03/16/18 13:59					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030846-BS1)					Prepared: 03/16/18 08:52		Analyzed: 03/16/18 14:01					
EPA 335.4												
Cyanide, Total	0.240	0.00500	0.00500	mg/L	1	0.250	---	96	85-115%	---	---	
Batch 8030902 - Method Prep: Aq									Water			
Blank (8030902-BLK2)					Prepared: 03/19/18 10:16		Analyzed: 03/19/18 14:35					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030902-BS2)					Prepared: 03/19/18 10:16		Analyzed: 03/19/18 14:37					
EPA 335.4												
Cyanide, Total	0.262	0.00500	0.00500	mg/L	1	0.250	---	105	85-115%	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030845 - Method Prep: Aq									Water			
Blank (8030845-BLK1)					Prepared: 03/16/18 08:42		Analyzed: 03/16/18 14:35					
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030845-BS1)					Prepared: 03/16/18 08:42		Analyzed: 03/16/18 14:37					
SM 4500-CN I												
Cyanide, WAD	0.231	0.00500	0.00500	mg/L	1	0.250	---	92	85-115%	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030846							
A8C0511-01	Water	EPA 335.4	03/13/18 12:20	03/16/18 08:52	6mL/6mL	6mL/6mL	1.00
Batch: 8030902							
A8C0511-02RE1	Water	EPA 335.4	03/13/18 12:30	03/19/18 10:16	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030845							
A8C0511-01	Water	SM 4500-CN I	03/13/18 12:20	03/16/18 08:42	6mL/6mL	6mL/6mL	1.00
A8C0511-02	Water	SM 4500-CN I	03/13/18 12:30	03/16/18 08:42	6mL/6mL	6mL/6mL	1.00

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Philip Nerenberg, Lab Director

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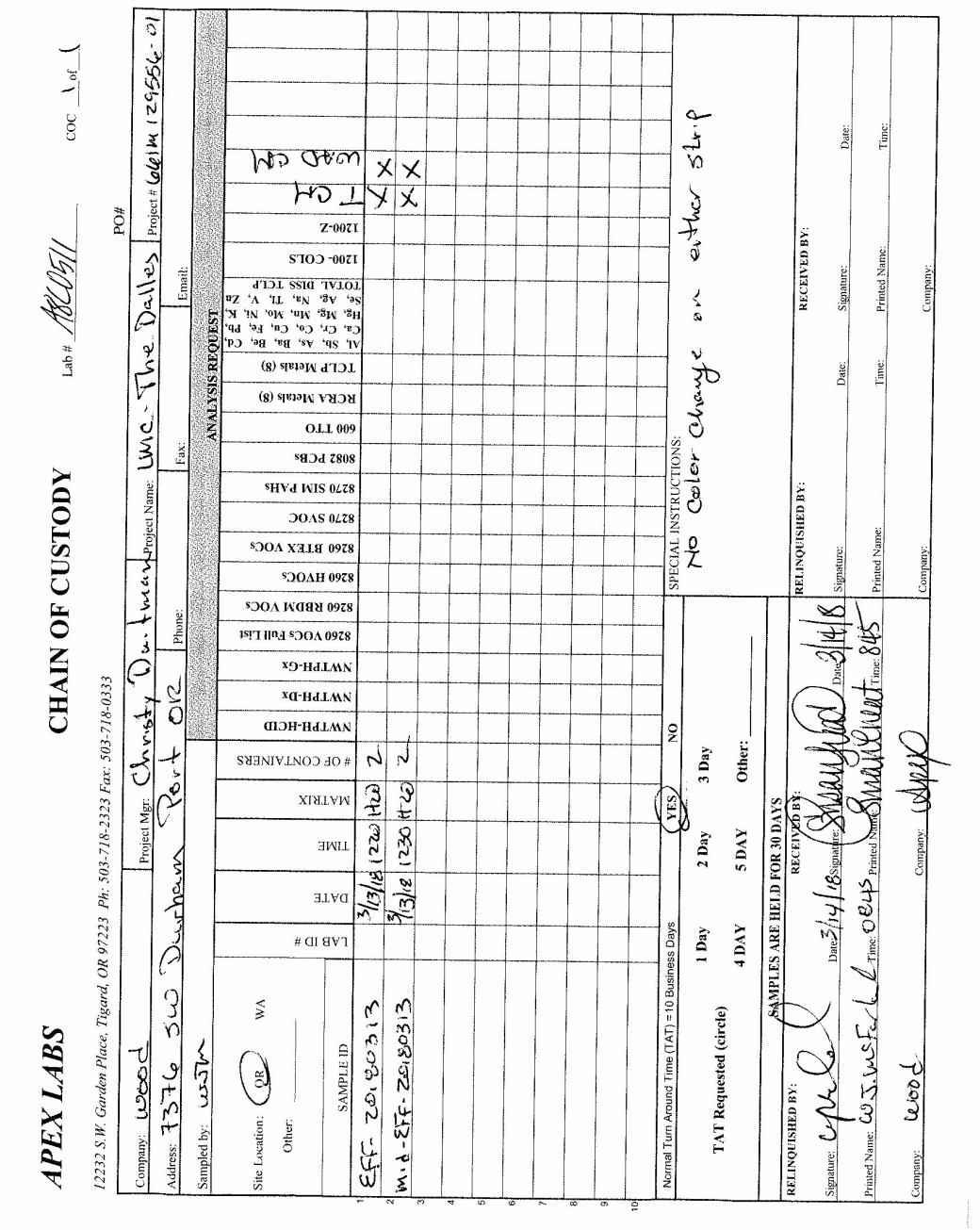
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58



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Philip Nerenberg

Philip Nerenberg, Lab Director

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7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/27/18 23:58

APEX LABS COOLER RECEIPT FORM

Client: Wood Element WO#: A8 C0511

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 3/14/18 @ 845 By: 8

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: 8 : 3/14/18 @ 845

Chain of Custody Included? Yes ✓ No___ Custody Seals? Yes___ No ✓

Signed/Dated by Client? Yes ✓ No___

Signed/Dated by Apex? Yes ✓ No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	2.0						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: 8 : 3/13/18 @ 11:11

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes X No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___ NA___

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

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Friday, March 30, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556-13

Enclosed are the results of analyses for work order A8C0659, which was received by the laboratory on 3/16/2018 at 1:22:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

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Lisa Domenighini For Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DUP01_20180315	A8C0659-01	Water	03/15/18 00:00	03/16/18 13:22
DUP02_20180315	A8C0659-02	Water	03/15/18 00:00	03/16/18 13:22
MW13-13S_20180315	A8C0659-03	Water	03/15/18 10:15	03/16/18 13:22
MW15-18P_20180315	A8C0659-04	Water	03/15/18 09:40	03/16/18 13:22
MW15-19SL_20180314	A8C0659-05	Water	03/14/18 16:35	03/16/18 13:22
MW15-20P_20180315	A8C0659-06	Water	03/15/18 08:20	03/16/18 13:22
MW-26S_20180314	A8C0659-07	Water	03/14/18 15:50	03/16/18 13:22
MW-37S_20180315	A8C0659-08	Water	03/15/18 10:55	03/16/18 13:22
MW-3S_20180315	A8C0659-09	Water	03/15/18 09:00	03/16/18 13:22
MW-5_20180314	A8C0659-10	Water	03/14/18 17:50	03/16/18 13:22
MWR-29S_20180314	A8C0659-11	Water	03/14/18 17:10	03/16/18 13:22
MWR-4S_20180314	A8C0659-12	Water	03/14/18 15:00	03/16/18 13:22
MW13-14SL_20180315	A8C0659-13	Water	03/15/18 16:55	03/16/18 13:22
MW13-15SL_20180315	A8C0659-14	Water	03/15/18 16:10	03/16/18 13:22
MW-17S_20180315	A8C0659-15	Water	03/15/18 14:45	03/16/18 13:22
MW-22S_20180315	A8C0659-16	Water	03/15/18 12:10	03/16/18 13:22
MW-23S_20180315	A8C0659-17	Water	03/15/18 13:25	03/16/18 13:22
MW-35S_20180315	A8C0659-18	Water	03/15/18 14:05	03/16/18 13:22
MW-36S_20180315	A8C0659-19	Water	03/15/18 12:45	03/16/18 13:22
MW-5S_20180315	A8C0659-20	Water	03/15/18 11:35	03/16/18 13:22
MW15-17SL_20180315	A8C0659-21	Water	03/15/18 15:35	03/16/18 13:22

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Lisa Domenighini For Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
DUP01_20180315 (A8C0659-01)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**54.4**	---	2.00	mg/L	2	03/28/18 10:54	EPA 300.0	
DUP02_20180315 (A8C0659-02)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**168**	---	10.0	mg/L	10	03/28/18 11:16	EPA 300.0	
MW13-13S_20180315 (A8C0659-03)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**37.4**	---	1.00	mg/L	1	03/28/18 11:37	EPA 300.0	
MW15-18P_20180315 (A8C0659-04)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**31.1**	---	1.00	mg/L	1	03/28/18 11:59	EPA 300.0	
MW15-19SL_20180314 (A8C0659-05)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**101**	---	5.00	mg/L	5	03/28/18 12:20	EPA 300.0	
MW15-20P_20180315 (A8C0659-06)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**19.6**	---	1.00	mg/L	1	03/28/18 12:42	EPA 300.0	
MW-26S_20180314 (A8C0659-07)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**30.0**	---	1.00	mg/L	1	03/28/18 13:03	EPA 300.0	
MW-37S_20180315 (A8C0659-08)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**14.7**	---	1.00	mg/L	1	03/28/18 13:25	EPA 300.0	
MW-3S_20180315 (A8C0659-09)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**30.0**	---	1.00	mg/L	1	03/28/18 14:29	EPA 300.0	
MW-5_20180314 (A8C0659-10)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**45.0**	---	2.00	mg/L	2	03/28/18 15:55	EPA 300.0	
MWR-29S_20180314 (A8C0659-11)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**595**	---	50.0	mg/L	50	03/28/18 16:17	EPA 300.0	
MWR-4S_20180314 (A8C0659-12)			**Matrix: Water**					

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MWR-4S_20180314 (A8C0659-12)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**72.4**	---	5.00	mg/L	5	03/28/18 16:38	EPA 300.0	
MW13-14SL_20180315 (A8C0659-13)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**196**	---	10.0	mg/L	10	03/28/18 17:00	EPA 300.0	
MW13-15SL_20180315 (A8C0659-14)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**1330**	---	100	mg/L	100	03/28/18 17:21	EPA 300.0	
MW-17S_20180315 (A8C0659-15)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**30.1**	---	1.00	mg/L	1	03/28/18 17:43	EPA 300.0	
MW-22S_20180315 (A8C0659-16)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**53.1**	---	2.00	mg/L	2	03/28/18 19:31	EPA 300.0	
MW-23S_20180315 (A8C0659-17)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**22.7**	---	1.00	mg/L	1	03/28/18 19:52	EPA 300.0	
MW-35S_20180315 (A8C0659-18)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**91.4**	---	5.00	mg/L	5	03/28/18 20:14	EPA 300.0	
MW-36S_20180315 (A8C0659-19)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**82.7**	---	5.00	mg/L	5	03/28/18 20:35	EPA 300.0	
MW-5S_20180315 (A8C0659-20)			**Matrix: Water**					
Batch: 8031255								
Sulfate	**20.6**	---	2.00	mg/L	2	03/28/18 20:57	EPA 300.0	
MW15-17SL_20180315 (A8C0659-21)			**Matrix: Water**					
Batch: 8031256								
Sulfate	**164**	---	10.0	mg/L	10	03/28/18 22:01	EPA 300.0	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
DUP01_20180315 (A8C0659-01)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**7.92**	---	0.100	mg/L	1	03/22/18 18:56	EPA 300.0-LL	
DUP02_20180315 (A8C0659-02)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**0.792**	---	0.100	mg/L	1	03/22/18 22:31	EPA 300.0-LL	
MW13-13S_20180315 (A8C0659-03)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**0.499**	---	0.100	mg/L	1	03/22/18 22:52	EPA 300.0-LL	
MW15-18P_20180315 (A8C0659-04)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**13.2**	---	0.100	mg/L	1	03/22/18 23:14	EPA 300.0-LL	
MW15-19SL_20180314 (A8C0659-05)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**4.49**	---	0.100	mg/L	1	03/22/18 23:35	EPA 300.0-LL	
MW15-20P_20180315 (A8C0659-06)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**2.90**	---	0.100	mg/L	1	03/22/18 23:57	EPA 300.0-LL	
MW-26S_20180314 (A8C0659-07)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**0.385**	---	0.100	mg/L	1	03/23/18 00:19	EPA 300.0-LL	
MW-37S_20180315 (A8C0659-08)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**3.08**	---	0.100	mg/L	1	03/23/18 00:40	EPA 300.0-LL	
MW-3S_20180315 (A8C0659-09)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**0.307**	---	0.100	mg/L	1	03/23/18 01:02	EPA 300.0-LL	
MW-5_20180314 (A8C0659-10)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**0.504**	---	0.100	mg/L	1	03/23/18 03:11	EPA 300.0-LL	
MWR-29S_20180314 (A8C0659-11)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**1.71**	---	0.100	mg/L	1	03/23/18 03:32	EPA 300.0-LL	
MWR-4S_20180314 (A8C0659-12)			**Matrix: Water**					

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Lisa Domenighini For Philip Nerenberg, Lab Director

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7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MWR-4S_20180314 (A8C0659-12)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**0.158**	---	0.100	mg/L	1	03/23/18 03:54	EPA 300.0-LL	
MW13-14SL_20180315 (A8C0659-13)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**20.0**	---	0.100	mg/L	1	03/23/18 04:15	EPA 300.0-LL	
MW13-15SL_20180315 (A8C0659-14)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**4.63**	---	0.100	mg/L	1	03/23/18 04:37	EPA 300.0-LL	
MW-17S_20180315 (A8C0659-15)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**0.336**	---	0.100	mg/L	1	03/23/18 04:58	EPA 300.0-LL	
MW-22S_20180315 (A8C0659-16)			**Matrix: Water**					
Batch: 8031066								
Fluoride	**0.471**	---	0.100	mg/L	1	03/23/18 06:47	EPA 300.0-LL	
MW-23S_20180315 (A8C0659-17)			**Matrix: Water**					
Batch: 8031066								
Fluoride	**0.268**	---	0.100	mg/L	1	03/23/18 07:52	EPA 300.0-LL	
MW-35S_20180315 (A8C0659-18)			**Matrix: Water**					
Batch: 8031066								
Fluoride	**0.577**	---	0.100	mg/L	1	03/23/18 08:14	EPA 300.0-LL	
MW-36S_20180315 (A8C0659-19)			**Matrix: Water**					
Batch: 8031066								
Fluoride	**0.189**	---	0.100	mg/L	1	03/23/18 08:36	EPA 300.0-LL	
MW-5S_20180315 (A8C0659-20)			**Matrix: Water**					
Batch: 8031066								
Fluoride	**7.55**	---	0.100	mg/L	1	03/23/18 08:57	EPA 300.0-LL	
MW15-17SL_20180315 (A8C0659-21)			**Matrix: Water**					
Batch: 8031066								
Fluoride	**0.826**	---	0.100	mg/L	1	03/23/18 09:19	EPA 300.0-LL	

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7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
DUP01_20180315 (A8C0659-01)			**Matrix: Water**		**Batch: 8030927**			
Cyanide, Total	**0.202**	0.00500	0.00500	mg/L	1	03/20/18 13:25	EPA 335.4	
DUP02_20180315 (A8C0659-02)			**Matrix: Water**		**Batch: 8030927**			
Cyanide, Total	**0.195**	0.00500	0.00500	mg/L	1	03/20/18 13:27	EPA 335.4	
MW13-13S_20180315 (A8C0659-03)			**Matrix: Water**		**Batch: 8030927**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/20/18 13:29	EPA 335.4	
MW15-18P_20180315 (A8C0659-04RE2)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 15:53	EPA 335.4	
MW15-19SL_20180314 (A8C0659-05RE1)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 15:35	EPA 335.4	
MW15-20P_20180315 (A8C0659-06RE1)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 15:37	EPA 335.4	
MW-26S_20180314 (A8C0659-07RE1)			**Matrix: Water**		**Batch: 8030902**			
Cyanide, Total	**0.102**	0.00500	0.00500	mg/L	1	03/19/18 15:09	EPA 335.4	
MW-37S_20180315 (A8C0659-08RE1)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.00930**	0.00500	0.00500	mg/L	1	03/19/18 15:39	EPA 335.4	
MW-3S_20180315 (A8C0659-09RE1)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 15:41	EPA 335.4	
MW-5_20180314 (A8C0659-10RE1)			**Matrix: Water**		**Batch: 8030902**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 15:11	EPA 335.4	
MWR-29S_20180314 (A8C0659-11RE1)			**Matrix: Water**		**Batch: 8030902**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 15:13	EPA 335.4	
MWR-4S_20180314 (A8C0659-12RE1)			**Matrix: Water**		**Batch: 8030902**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 15:15	EPA 335.4	
MW13-14SL_20180315 (A8C0659-13)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.0289**	0.00500	0.00500	mg/L	1	03/19/18 14:07	EPA 335.4	
MW13-15SL_20180315 (A8C0659-14)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.0165**	0.00500	0.00500	mg/L	1	03/19/18 14:09	EPA 335.4	
MW-17S_20180315 (A8C0659-15)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.0179**	0.00500	0.00500	mg/L	1	03/19/18 14:11	EPA 335.4	
MW-22S_20180315 (A8C0659-16)			**Matrix: Water**		**Batch: 8030903**			

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-22S_20180315 (A8C0659-16)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.155**	0.00500	0.00500	mg/L	1	03/19/18 14:13	EPA 335.4	
MW-23S_20180315 (A8C0659-17)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.0192**	0.00500	0.00500	mg/L	1	03/19/18 14:15	EPA 335.4	
MW-35S_20180315 (A8C0659-18)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.0199**	0.00500	0.00500	mg/L	1	03/19/18 14:17	EPA 335.4	
MW-36S_20180315 (A8C0659-19)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 14:19	EPA 335.4	
MW-5S_20180315 (A8C0659-20)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.224**	0.00500	0.00500	mg/L	1	03/19/18 14:21	EPA 335.4	
MW15-17SL_20180315 (A8C0659-21)			**Matrix: Water**		**Batch: 8030903**			
Cyanide, Total	**0.216**	0.00500	0.00500	mg/L	1	03/19/18 14:23	EPA 335.4	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
DUP01_20180315 (A8C0659-01)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	**0.0139**	---	0.00500	mg/L	1	03/27/18 11:11	SM 4500-CN I	
DUP02_20180315 (A8C0659-02)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	**0.0101**	---	0.00500	mg/L	1	03/27/18 11:13	SM 4500-CN I	
MW13-13S_20180315 (A8C0659-03)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/27/18 11:15	SM 4500-CN I	
MW15-18P_20180315 (A8C0659-04)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/27/18 11:17	SM 4500-CN I	
MW15-19SL_20180314 (A8C0659-05)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 13:12	SM 4500-CN I	
MW15-20P_20180315 (A8C0659-06)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/27/18 12:01	SM 4500-CN I	
MW-26S_20180314 (A8C0659-07)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	**0.00880**	---	0.00500	mg/L	1	03/22/18 13:16	SM 4500-CN I	
MW-37S_20180315 (A8C0659-08)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/27/18 12:03	SM 4500-CN I	
MW-3S_20180315 (A8C0659-09)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/27/18 12:05	SM 4500-CN I	
MW-5_20180314 (A8C0659-10)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 13:18	SM 4500-CN I	
MWR-29S_20180314 (A8C0659-11)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 13:20	SM 4500-CN I	
MWR-4S_20180314 (A8C0659-12)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 13:22	SM 4500-CN I	
MW13-14SL_20180315 (A8C0659-13)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	**0.00520**	---	0.00500	mg/L	1	03/27/18 11:31	SM 4500-CN I	
MW13-15SL_20180315 (A8C0659-14)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 13:24	SM 4500-CN I	
MW-17S_20180315 (A8C0659-15)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 13:26	SM 4500-CN I	
MW-22S_20180315 (A8C0659-16)			**Matrix: Water**		**Batch: 8031034**			

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-22S_20180315 (A8C0659-16)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	**0.00840**	---	0.00500	mg/L	1	03/22/18 13:54	SM 4500-CN I	
MW-23S_20180315 (A8C0659-17)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 14:02	SM 4500-CN I	
MW-35S_20180315 (A8C0659-18)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 13:28	SM 4500-CN I	
MW-36S_20180315 (A8C0659-19)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	ND	---	0.00500	mg/L	1	03/22/18 13:36	SM 4500-CN I	
MW-5S_20180315 (A8C0659-20)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	**0.0126**	---	0.00500	mg/L	1	03/22/18 13:38	SM 4500-CN I	
MW15-17SL_20180315 (A8C0659-21)			**Matrix: Water**		**Batch: 8031034**			
Cyanide, WAD	**0.0108**	---	0.00500	mg/L	1	03/22/18 13:40	SM 4500-CN I	

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Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031255 - Method Prep: Aq							Water					
Blank (8031255-BLK1)					Prepared: 03/28/18 08:34		Analyzed: 03/28/18 10:11					
EPA 300.0												
Sulfate	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
LCS (8031255-BS1)					Prepared: 03/28/18 08:34		Analyzed: 03/28/18 10:32					
EPA 300.0												
Sulfate	8.12	---	1.00	mg/L	1	8.00	---	102	90-110%	---	---	
Duplicate (8031255-DUP1)					Prepared: 03/28/18 08:34		Analyzed: 03/28/18 14:51					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
EPA 300.0												
Sulfate	**29.8**	---	1.00	mg/L	1	---	30.0	---	---	0.8	15%	
Duplicate (8031255-DUP2)					Prepared: 03/28/18 08:34		Analyzed: 03/28/18 18:48					
QC Source Sample: MW-17S_20180315 (A8C0659-15)												
EPA 300.0												
Sulfate	**30.4**	---	1.00	mg/L	1	---	30.1	---	---	1	15%	
Matrix Spike (8031255-MS1)					Prepared: 03/28/18 08:34		Analyzed: 03/28/18 15:12					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
EPA 300.0												
Sulfate	40.3	---	1.25	mg/L	1	10.0	30.0	103	80-120%	---	---	
Matrix Spike (8031255-MS2)					Prepared: 03/28/18 08:34		Analyzed: 03/28/18 19:09					
QC Source Sample: MW-17S_20180315 (A8C0659-15)												
EPA 300.0												
Sulfate	40.8	---	1.25	mg/L	1	10.0	30.1	107	80-120%	---	---	
Matrix Spike Dup (8031255-MSD1)					Prepared: 03/28/18 08:34		Analyzed: 03/28/18 15:34					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
EPA 300.0												
Sulfate	40.5	---	1.25	mg/L	1	10.0	30.0	104	80-120%	1	15%	
Batch 8031256 - Method Prep: Aq							Water					
Blank (8031256-BLK1)					Prepared: 03/28/18 08:39		Analyzed: 03/28/18 21:18					
EPA 300.0												
Sulfate	ND	---	1.00	mg/L	1	---	---	---	---	---	---	

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7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031256 - Method Prep: Aq												**Water**
LCS (8031256-BS1)						Prepared: 03/28/18 08:39		Analyzed: 03/28/18 21:40				
EPA 300.0												
Sulfate	8.02	---	1.00	mg/L	1	8.00	---	100	90-110%	---	---	

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Lisa A Domenighini

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Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031046 - Method Prep: Aq							**Water**					
Blank (8031046-BLK1)					Prepared: 03/22/18 11:16		Analyzed: 03/22/18 18:13					
EPA 300.0-LL												
Fluoride	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
LCS (8031046-BS1)					Prepared: 03/22/18 11:16		Analyzed: 03/22/18 18:34					
EPA 300.0-LL												
Fluoride	1.45	---	0.100	mg/L	1	1.50	---	96	90-110%	---	---	
Duplicate (8031046-DUP1)					Prepared: 03/22/18 11:16		Analyzed: 03/22/18 19:17					
QC Source Sample: Other (A8C0659-01)												
EPA 300.0-LL												
Fluoride	**7.90**	---	0.100	mg/L	1	---	7.92	---	---	0.2	15%	
Duplicate (8031046-DUP2)					Prepared: 03/22/18 11:16		Analyzed: 03/23/18 01:23					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
EPA 300.0-LL												
Fluoride	**0.288**	---	0.100	mg/L	1	---	0.307	---	---	6	15%	
Matrix Spike (8031046-MS1)					Prepared: 03/22/18 11:16		Analyzed: 03/22/18 19:39					
QC Source Sample: Other (A8C0659-01)												
EPA 300.0-LL												
Fluoride	8.92	---	0.104	mg/L	1	1.56	7.92	64	80-120%	---	---	Q-01
Matrix Spike (8031046-MS2)					Prepared: 03/22/18 11:16		Analyzed: 03/23/18 01:45					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
EPA 300.0-LL												
Fluoride	1.73	---	0.104	mg/L	1	1.56	0.307	92	80-120%	---	---	
Matrix Spike Dup (8031046-MSD2)					Prepared: 03/22/18 11:16		Analyzed: 03/23/18 02:49					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
EPA 300.0-LL												
Fluoride	1.75	---	0.104	mg/L	1	1.56	0.307	92	80-120%	0.8	15%	

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7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031066 - Method Prep: Aq							**Water**					
Blank (8031066-BLK1)					Prepared: 03/22/18 15:11		Analyzed: 03/23/18 06:03					
EPA 300.0-LL												
Fluoride	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
LCS (8031066-BS1)					Prepared: 03/22/18 15:11		Analyzed: 03/23/18 06:25					
EPA 300.0-LL												
Fluoride	1.44	---	0.100	mg/L	1	1.50	---	96	90-110%	---	---	
Duplicate (8031066-DUP1)					Prepared: 03/22/18 15:11		Analyzed: 03/23/18 07:09					
QC Source Sample: MW-22S_20180315 (A8C0659-16)												
EPA 300.0-LL												
Fluoride	**0.468**	---	0.100	mg/L	1	---	0.471	---	---	0.7	15%	
Matrix Spike (8031066-MS1)					Prepared: 03/22/18 15:11		Analyzed: 03/23/18 07:30					
QC Source Sample: MW-22S_20180315 (A8C0659-16)												
EPA 300.0-LL												
Fluoride	1.94	---	0.104	mg/L	1	1.56	0.471	94	80-120%	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030902 - Method Prep: Aq									Water			
Blank (8030902-BLK2)					Prepared: 03/19/18 10:16		Analyzed: 03/19/18 14:35					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030902-BS2)					Prepared: 03/19/18 10:16		Analyzed: 03/19/18 14:37					
EPA 335.4												
Cyanide, Total	0.262	0.00500	0.00500	mg/L	1	0.250	---	105	85-115%	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030903 - Method Prep: Aq							**Water**					
Blank (8030903-BLK2)					Prepared: 03/19/18 10:19		Analyzed: 03/19/18 15:29					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030903-BS2)					Prepared: 03/19/18 10:19		Analyzed: 03/19/18 15:31					
EPA 335.4												
Cyanide, Total	0.276	0.00500	0.00500	mg/L	1	0.250	---	111	85-115%	---	---	
Duplicate (8030903-DUP2)					Prepared: 03/19/18 10:19		Analyzed: 03/19/18 14:31					
QC Source Sample: MW15-17SL_20180315 (A8C0659-21)												
EPA 335.4												
Cyanide, Total	**0.238**	0.00500	0.00500	mg/L	1	---	0.216	---	---	10	10%	
Duplicate (8030903-DUP3)					Prepared: 03/19/18 10:19		Analyzed: 03/19/18 15:49					
QC Source Sample: MW-3S_20180315 (A8C0659-09RE1)												
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (8030903-MS2)					Prepared: 03/19/18 10:19		Analyzed: 03/19/18 14:33					
QC Source Sample: MW15-17SL_20180315 (A8C0659-21)												
EPA 335.4												
Cyanide, Total	0.482	0.00500	0.00500	mg/L	1	0.250	0.216	107	80-120%	---	---	
Matrix Spike (8030903-MS3)					Prepared: 03/19/18 10:19		Analyzed: 03/19/18 15:51					
QC Source Sample: MW-3S_20180315 (A8C0659-09RE1)												
EPA 335.4												
Cyanide, Total	0.270	0.00500	0.00500	mg/L	1	0.250	ND	108	80-120%	---	---	
Matrix Spike Dup (8030903-MSD1)					Prepared: 03/19/18 10:19		Analyzed: 03/19/18 14:05					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
EPA 335.4												
Cyanide, Total	0.284	0.00500	0.00500	mg/L	1	0.250	ND	114	80-120%	5	10%	

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Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030927 - Method Prep: Aq									Water			
Blank (8030927-BLK1)					Prepared: 03/20/18 07:00		Analyzed: 03/20/18 12:31					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030927-BS1)					Prepared: 03/20/18 07:00		Analyzed: 03/20/18 12:33					
EPA 335.4												
Cyanide, Total	0.242	0.00500	0.00500	mg/L	1	0.250	---	97	85-115%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031034 - Method Prep: Aq							**Water**					
Blank (8031034-BLK1)					Prepared: 03/22/18 09:08		Analyzed: 03/22/18 13:50					
SM 4500-CN I												
Cyanide, WAD	ND	---	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031034-BS1)					Prepared: 03/22/18 09:08		Analyzed: 03/22/18 13:10					
SM 4500-CN I												
Cyanide, WAD	0.246	---	0.00500	mg/L	1	0.250	---	98	85-115%	---	---	
Duplicate (8031034-DUP2)					Prepared: 03/22/18 09:08		Analyzed: 03/22/18 13:42					
QC Source Sample: MW15-17SL_20180315 (A8C0659-21)												
SM 4500-CN I												
Cyanide, WAD	**0.0110**	---	0.00500	mg/L	1	---	0.0108	---	---	2	10%	
Duplicate (8031034-DUP3)					Prepared: 03/22/18 09:08		Analyzed: 03/22/18 14:10					
QC Source Sample: MW15-19SL_20180314 (A8C0659-05)												
SM 4500-CN I												
Cyanide, WAD	ND	---	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (8031034-MS1)					Prepared: 03/22/18 09:08		Analyzed: 03/22/18 13:14					
QC Source Sample: MW15-19SL_20180314 (A8C0659-05)												
SM 4500-CN I												
Cyanide, WAD	0.246	---	0.00500	mg/L	1	0.250	ND	99	80-120%	---	---	
Matrix Spike (8031034-MS2)					Prepared: 03/22/18 09:08		Analyzed: 03/22/18 14:04					
QC Source Sample: MW15-17SL_20180315 (A8C0659-21)												
SM 4500-CN I												
Cyanide, WAD	0.280	---	0.00500	mg/L	1	0.250	0.0108	108	80-120%	---	---	

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Lisa Domenighini For Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031200 - Method Prep: Aq							**Water**					
Blank (8031200-BLK1)					Prepared: 03/27/18 06:30		Analyzed: 03/27/18 11:59					
SM 4500-CN I												
Cyanide, WAD	ND	---	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031200-BS1)					Prepared: 03/27/18 06:30		Analyzed: 03/27/18 10:55					
SM 4500-CN I												
Cyanide, WAD	0.246	---	0.00500	mg/L	1	0.250	---	98	85-115%	---	---	
Duplicate (8031200-DUP1)					Prepared: 03/27/18 06:30		Analyzed: 03/27/18 11:19					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
SM 4500-CN I												
Cyanide, WAD	ND	---	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (8031200-MS1)					Prepared: 03/27/18 06:30		Analyzed: 03/27/18 11:21					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
SM 4500-CN I												
Cyanide, WAD	0.250	---	0.00500	mg/L	1	0.250	ND	100	80-120%	---	---	
Matrix Spike Dup (8031200-MSD1)					Prepared: 03/27/18 06:30		Analyzed: 03/27/18 11:23					
QC Source Sample: MW-3S_20180315 (A8C0659-09)												
SM 4500-CN I												
Cyanide, WAD	0.251	---	0.00500	mg/L	1	0.250	ND	100	80-120%	0.4	10%	

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7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031255							
A8C0659-01	Water	EPA 300.0	03/15/18 00:00	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-02	Water	EPA 300.0	03/15/18 00:00	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-03	Water	EPA 300.0	03/15/18 10:15	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-04	Water	EPA 300.0	03/15/18 09:40	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-05	Water	EPA 300.0	03/14/18 16:35	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-06	Water	EPA 300.0	03/15/18 08:20	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-07	Water	EPA 300.0	03/14/18 15:50	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-08	Water	EPA 300.0	03/15/18 10:55	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-09	Water	EPA 300.0	03/15/18 09:00	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-10	Water	EPA 300.0	03/14/18 17:50	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-11	Water	EPA 300.0	03/14/18 17:10	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-12	Water	EPA 300.0	03/14/18 15:00	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-13	Water	EPA 300.0	03/15/18 16:55	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-14	Water	EPA 300.0	03/15/18 16:10	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-15	Water	EPA 300.0	03/15/18 14:45	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-16	Water	EPA 300.0	03/15/18 12:10	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-17	Water	EPA 300.0	03/15/18 13:25	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-18	Water	EPA 300.0	03/15/18 14:05	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-19	Water	EPA 300.0	03/15/18 12:45	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
A8C0659-20	Water	EPA 300.0	03/15/18 11:35	03/28/18 08:34	5mL/5mL	5mL/5mL	1.00
Batch: 8031256							
A8C0659-21	Water	EPA 300.0	03/15/18 15:35	03/28/18 08:39	5mL/5mL	5mL/5mL	1.00

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031046							
A8C0659-01	Water	EPA 300.0-LL	03/15/18 00:00	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-02	Water	EPA 300.0-LL	03/15/18 00:00	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-03	Water	EPA 300.0-LL	03/15/18 10:15	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-04	Water	EPA 300.0-LL	03/15/18 09:40	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-05	Water	EPA 300.0-LL	03/14/18 16:35	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-06	Water	EPA 300.0-LL	03/15/18 08:20	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8C0659-07	Water	EPA 300.0-LL	03/14/18 15:50	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-08	Water	EPA 300.0-LL	03/15/18 10:55	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-09	Water	EPA 300.0-LL	03/15/18 09:00	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-10	Water	EPA 300.0-LL	03/14/18 17:50	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-11	Water	EPA 300.0-LL	03/14/18 17:10	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-12	Water	EPA 300.0-LL	03/14/18 15:00	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-13	Water	EPA 300.0-LL	03/15/18 16:55	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-14	Water	EPA 300.0-LL	03/15/18 16:10	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0659-15	Water	EPA 300.0-LL	03/15/18 14:45	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
Batch: 8031066							
A8C0659-16	Water	EPA 300.0-LL	03/15/18 12:10	03/22/18 15:11	10mL/10mL	5mL/5mL	1.00
A8C0659-17	Water	EPA 300.0-LL	03/15/18 13:25	03/22/18 15:11	10mL/10mL	5mL/5mL	1.00
A8C0659-18	Water	EPA 300.0-LL	03/15/18 14:05	03/22/18 15:11	10mL/10mL	5mL/5mL	1.00
A8C0659-19	Water	EPA 300.0-LL	03/15/18 12:45	03/22/18 15:11	10mL/10mL	5mL/5mL	1.00
A8C0659-20	Water	EPA 300.0-LL	03/15/18 11:35	03/22/18 15:11	10mL/10mL	5mL/5mL	1.00
A8C0659-21	Water	EPA 300.0-LL	03/15/18 15:35	03/22/18 15:11	10mL/10mL	5mL/5mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030902							
A8C0659-07RE1	Water	EPA 335.4	03/14/18 15:50	03/19/18 10:16	6mL/6mL	6mL/6mL	1.00
A8C0659-10RE1	Water	EPA 335.4	03/14/18 17:50	03/19/18 10:16	6mL/6mL	6mL/6mL	1.00
A8C0659-11RE1	Water	EPA 335.4	03/14/18 17:10	03/19/18 10:16	6mL/6mL	6mL/6mL	1.00
A8C0659-12RE1	Water	EPA 335.4	03/14/18 15:00	03/19/18 10:16	6mL/6mL	6mL/6mL	1.00
Batch: 8030903							
A8C0659-04RE2	Water	EPA 335.4	03/15/18 09:40	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-05RE1	Water	EPA 335.4	03/14/18 16:35	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-06RE1	Water	EPA 335.4	03/15/18 08:20	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-08RE1	Water	EPA 335.4	03/15/18 10:55	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-09RE1	Water	EPA 335.4	03/15/18 09:00	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-13	Water	EPA 335.4	03/15/18 16:55	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-14	Water	EPA 335.4	03/15/18 16:10	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-15	Water	EPA 335.4	03/15/18 14:45	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8C0659-16	Water	EPA 335.4	03/15/18 12:10	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-17	Water	EPA 335.4	03/15/18 13:25	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-18	Water	EPA 335.4	03/15/18 14:05	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-19	Water	EPA 335.4	03/15/18 12:45	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-20	Water	EPA 335.4	03/15/18 11:35	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
A8C0659-21	Water	EPA 335.4	03/15/18 15:35	03/19/18 10:19	6mL/6mL	6mL/6mL	1.00
Batch: 8030927							
A8C0659-01	Water	EPA 335.4	03/15/18 00:00	03/20/18 07:00	6mL/6mL	6mL/6mL	1.00
A8C0659-02	Water	EPA 335.4	03/15/18 00:00	03/20/18 07:00	6mL/6mL	6mL/6mL	1.00
A8C0659-03	Water	EPA 335.4	03/15/18 10:15	03/20/18 07:00	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031034							
A8C0659-05	Water	SM 4500-CN I	03/14/18 16:35	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-07	Water	SM 4500-CN I	03/14/18 15:50	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-10	Water	SM 4500-CN I	03/14/18 17:50	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-11	Water	SM 4500-CN I	03/14/18 17:10	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-12	Water	SM 4500-CN I	03/14/18 15:00	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-14	Water	SM 4500-CN I	03/15/18 16:10	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-15	Water	SM 4500-CN I	03/15/18 14:45	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-16	Water	SM 4500-CN I	03/15/18 12:10	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-17	Water	SM 4500-CN I	03/15/18 13:25	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-18	Water	SM 4500-CN I	03/15/18 14:05	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-19	Water	SM 4500-CN I	03/15/18 12:45	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-20	Water	SM 4500-CN I	03/15/18 11:35	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
A8C0659-21	Water	SM 4500-CN I	03/15/18 15:35	03/22/18 09:08	6mL/6mL	6mL/6mL	1.00
Batch: 8031200							
A8C0659-01	Water	SM 4500-CN I	03/15/18 00:00	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0659-02	Water	SM 4500-CN I	03/15/18 00:00	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0659-03	Water	SM 4500-CN I	03/15/18 10:15	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0659-04	Water	SM 4500-CN I	03/15/18 09:40	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0659-06	Water	SM 4500-CN I	03/15/18 08:20	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

SAMPLE PREPARATION INFORMATION

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8C0659-08	Water	SM 4500-CN I	03/15/18 10:55	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0659-09	Water	SM 4500-CN I	03/15/18 09:00	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0659-13	Water	SM 4500-CN I	03/15/18 16:55	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00

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7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

Notes and Definitions

Qualifiers:

Q-01	Spike recovery and/or RPD is outside acceptance limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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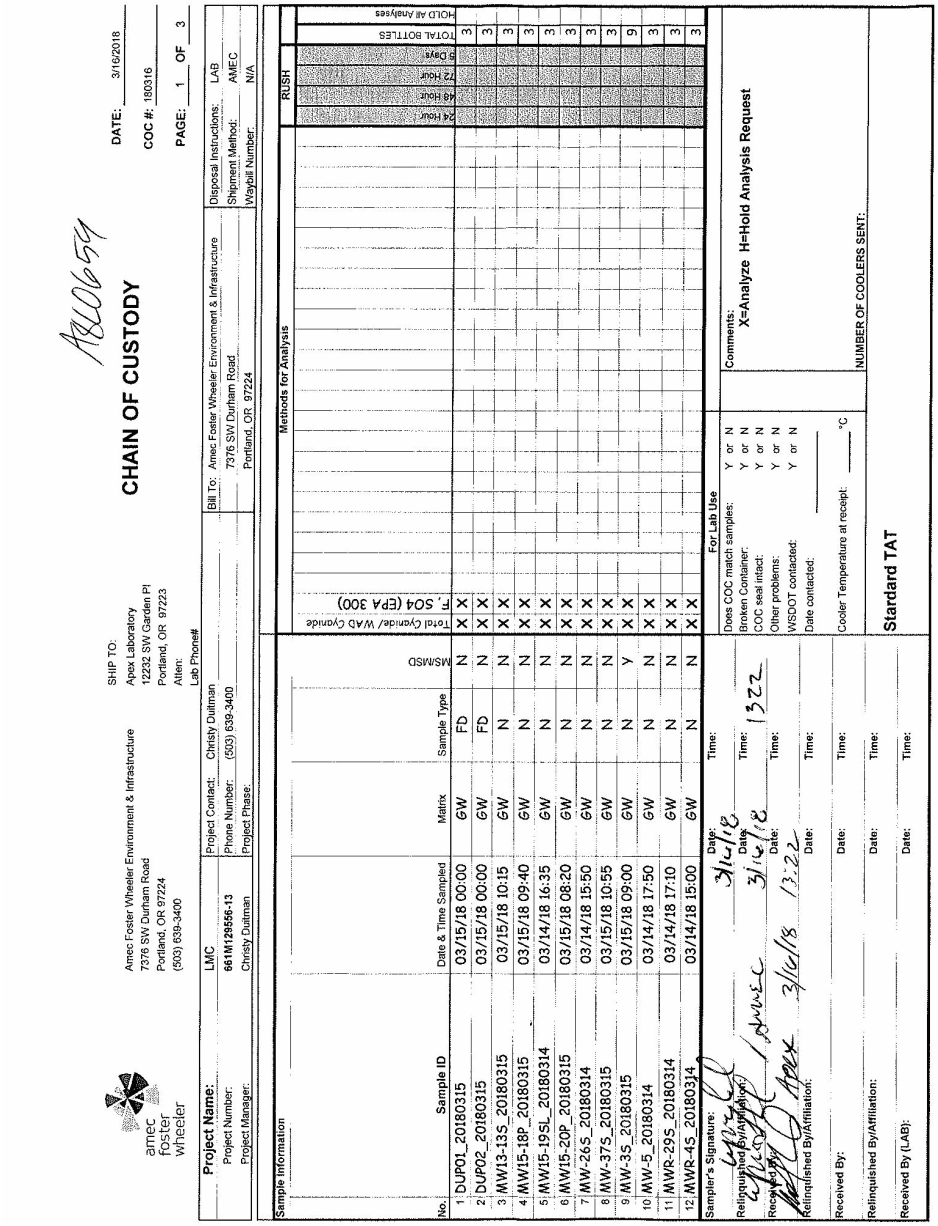
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09



amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure
7376 SW Durham Road
Portland, OR 97224
(503) 639-3400

SHIP TO:
Apex Laboratory
12232 SW Garden Pl
Portland, OR 97223
Attn:
Lab Phone#

CHAIN OF CUSTODY

DATE: 3/16/2018
COC #: 180316
PAGE: 1 OF 3

Project Name:	LMC	Project Contact:	Christy Duitman
Project Number:	661M129556-13	Phone Number:	(503) 639-3400
Project Manager:	Christy Duitman	Project Phase:	

Bill To: Amec Foster Wheeler Environment & Infrastructure
7376 SW Durham Road
Portland, OR 97224

Disposal Instructions: LAB
Shipment Method: AMEC
Waybill Number: N/A

Sample Information

Methods for Analysis

RUSH: 24 Hour | 48 Hour | 72 Hour | 5 Days

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Cyanide/ WAD Cyanide F, SO4 (EPA 300)	TOTAL BOTTLES	HOLD All Analyses
1	DUP01_20180315	03/15/18 00:00	GW	FD	N	X X	3	
2	DUP02_20180315	03/15/18 00:00	GW	FD	N	X X	3	
3	MW13-13S_20180315	03/15/18 10:15	GW	N	N	X X	3	
4	MW15-18P_20180315	03/15/18 09:40	GW	N	N	X X	3	
5	MW15-19SL_20180314	03/14/18 16:35	GW	N	N	X X	3	
6	MW15-20P_20180315	03/15/18 08:20	GW	N	N	X X	3	
7	MW-26S_20180314	03/14/18 15:50	GW	N	N	X X	3	
8	MW-37S_20180315	03/15/18 10:55	GW	N	N	X X	3	
9	MW-3S_20180315	03/15/18 09:00	GW	N	Y	X X	9	
10	MW-5_20180314	03/14/18 17:50	GW	N	N	X X	3	
11	MWR-29S_20180314	03/14/18 17:10	GW	N	N	X X	3	
12	MWR-45_20180314	03/14/18 15:00	GW	N	N	X X	3	

Sampler's Signature: Date: 3/16/18 Time:

For Lab Use
Does COC match samples: Y or N
Broken Container: Y or N
COC seal intact: Y or N
Other problems: Y or N
WSDOT contacted:
Date contacted:
Cooler Temperature at receipt: ____ °C

Comments:
X=Analyze H=Hold Analysis Request

Relinquished By/Affiliation:	Date: 3/16/18	Time: 1322	
Received By:	Date: 3/16/18	Time: 13:22	
Relinquished By/Affiliation:	Date:	Time:	
Received By:	Date:	Time:	
Relinquished By/Affiliation:	Date:	Time:	
Received By (LAB):	Date:	Time:	

NUMBER OF COOLERS SENT:

Standard TAT

Apex Laboratories

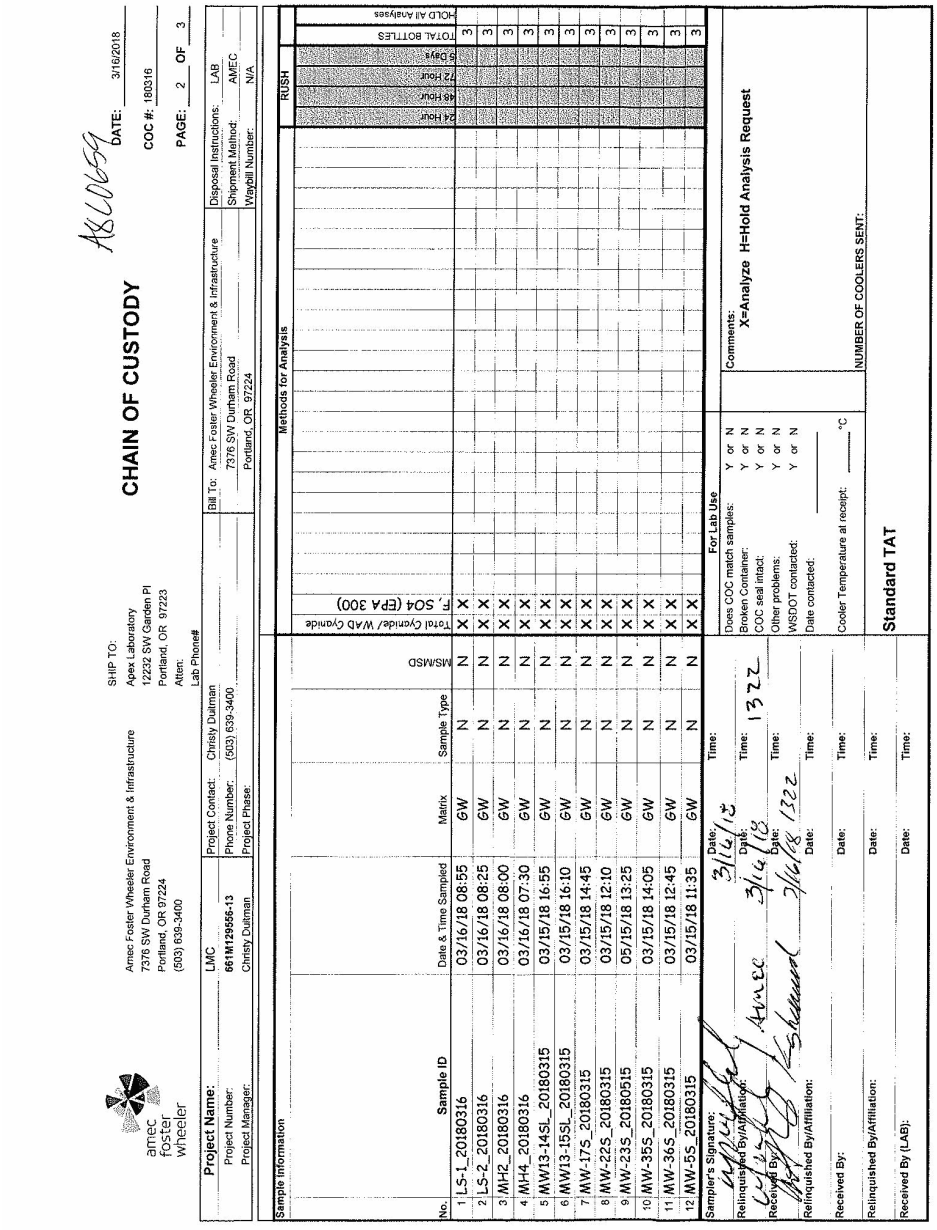
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09



CHAIN OF CUSTODY

DATE: 3/16/2018

COC #: 180316

PAGE: 2 OF 3

SHIP TO:
Apex Laboratory
12232 SW Garden Pl
Portland, OR 97223
Attn:
Lab Phone#

Amec Foster Wheeler Environment & Infrastructure
7376 SW Durham Road
Portland, OR 97224
(503) 639-3400

Project Name: LMC
Project Number: 661M129556-13
Project Manager: Christy Duitman

Project Contact: Christy Duitman
Phone Number: (503) 639-3400
Project Phase:

Bill To: Amec Foster Wheeler Environment & Infrastructure
7376 SW Durham Road
Portland, OR 97224

Disposal Instructions: LAB
Shipment Method: AMEC
Waybill Number: N/A

Sample Information

Methods for Analysis

RUSH

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Cyanide/ WAD Cyanide	F, SO4 (EPA 300)	24 Hour	48 Hour	72 Hour	5 Days	TOTAL BOTTLES	HOLD All Analyses
1	LS-1_20180316	03/16/18 08:55	GW	N	N	X	X					3	
2	LS-2_20180316	03/16/18 08:25	GW	N	N	X	X					3	
3	MH2_20180316	03/16/18 08:00	GW	N	N	X	X					3	
4	MH4_20180316	03/16/18 07:30	GW	N	N	X	X					3	
5	MW13-14SL_20180315	03/15/18 16:55	GW	N	N	X	X					3	
6	MW13-15SL_20180315	03/15/18 16:10	GW	N	N	X	X					3	
7	MW-17S_20180315	03/15/18 14:45	GW	N	N	X	X					3	
8	MW-22S_20180315	03/15/18 12:10	GW	N	N	X	X					3	
9	MW-23S_20180515	05/15/18 13:25	GW	N	N	X	X					3	
10	MW-35S_20180315	03/15/18 14:05	GW	N	N	X	X					3	
11	MW-36S_20180315	03/15/18 12:45	GW	N	N	X	X					3	
12	MW-5S_20180315	03/15/18 11:35	GW	N	N	X	X					3	

Sampler's Signature: Date: 3/14/18 Time:

For Lab Use

Does COC match samples: Y or N
Broken Container: Y or N
COC seal intact: Y or N
Other problems: Y or N
WSDOT contacted: Y or N
Date contacted:
Cooler Temperature at receipt: °C

Comments:
X=Analyze H=Hold Analysis Request

NUMBER OF COOLERS SENT:

Relinquished By/Affiliation: Date: 3/14/18 Time: 1322 Received By: Date: Time:

Relinquished By/Affiliation: Date: Time: Received By: Date: Time:

Relinquished By/Affiliation: Date: Time: Received By (LAB): Date: Time:

Standard TAT

Apex Laboratories

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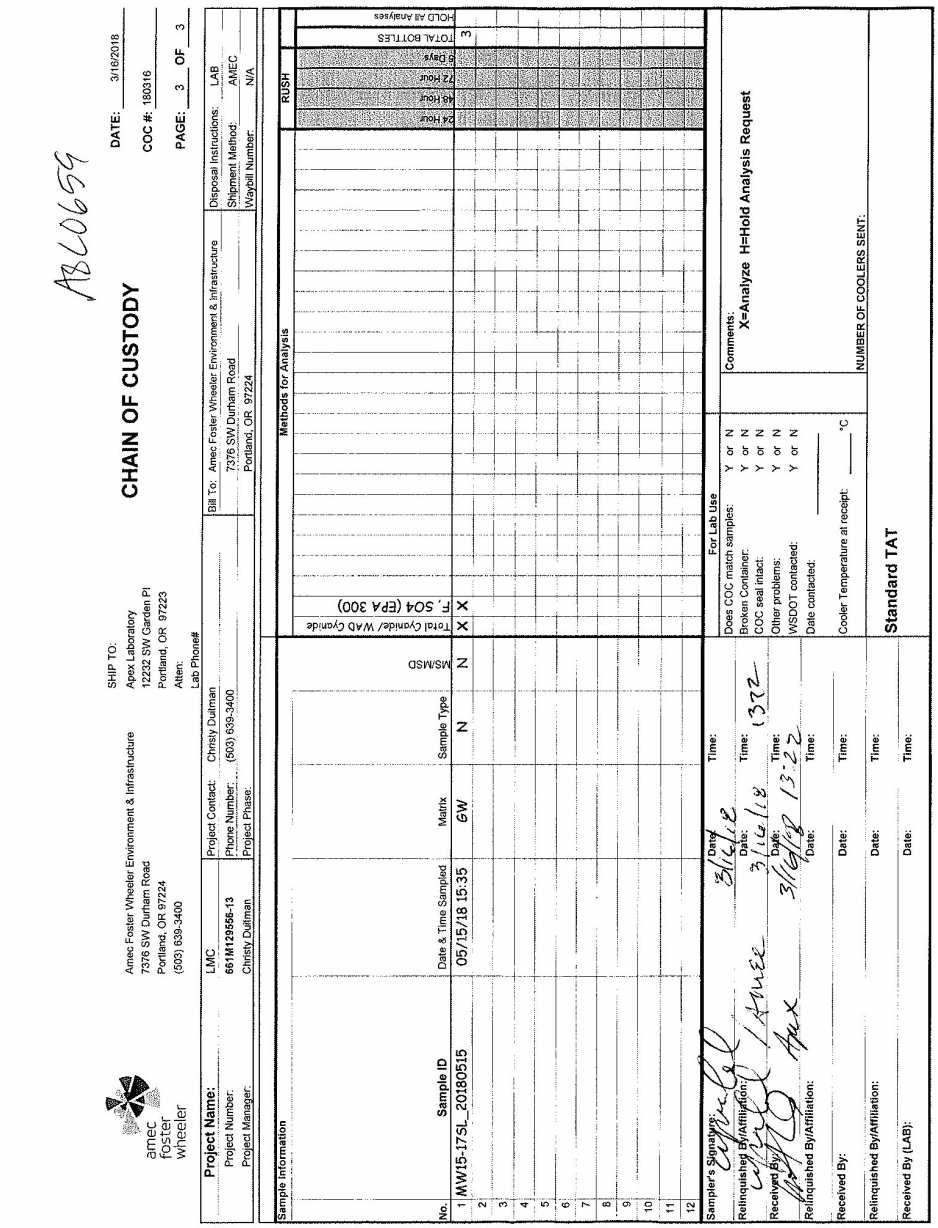
Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09



amec foster wheeler

SHIP TO: Apex Laboratory, 12232 SW Garden Pl, Portland, OR 97223, Attn:, Lab Phone#

CHAIN OF CUSTODY

DATE: 3/16/2018
COC #: 180316
PAGE: 3 OF 3

Project Name:	LMC	Project Contact:	Christy Duitman
Project Number:	661M129556-13	Phone Number:	(503) 639-3400
Project Manager:	Christy Duitman	Project Phase:	

Bill To: Amec Foster Wheeler Environment & Infrastructure, 7376 SW Durham Road, Portland, OR 97224

Disposal Instructions: LAB
Shipment Method: AMEC
Waybill Number: N/A

Sample Information

Methods for Analysis

RUSH: 24 Hour, 48 Hour, 72 Hour, 5 Days

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Cyanide/ WAD Cyanide	F. 504 (EPA 300)	TOTAL BOTTLES
1	MW15-17SL_20180515	05/15/18 15:35	GW	N	N	X	X	3
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

HOLD All Analyses

Sampler's Signature: Date: 3/16/18 Time:

Relinquished By/Affiliation: Date: 3/16/18 Time: 1372

Received By: Date: 3/16/18 Time: 13:22

Relinquished By/Affiliation: Date: Time:

Received By: Date: Time:

Relinquished By/Affiliation: Date: Time:

Received By (LAB): Date: Time:

For Lab Use

Does COC match samples: Y or N
Broken Container: Y or N
COC seal intact: Y or N
Other problems: Y or N
WSDOT contacted: Y or N
Date contacted: _____
Cooler Temperature at receipt: _____ °C

Comments:
X=Analyze H=Hold Analysis Request

NUMBER OF COOLERS SENT:

Standard TAT

Apex Laboratories

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Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09

APEX LABS COOLER RECEIPT FORM

Client: Wood Element WO#: A8 C0655

Project/Project #: LMC The Dalles / 661M129556

Delivery info:

Date/Time Received: 3/16/18 @ MS By: 13:22

Delivered by: Apex___Client X ESS___FedEx___UPS___Swift___Senvoy___SDS___Other_____

Cooler Inspection Inspected by: MS : 3/16/18 @ 13:23

Chain of Custody Included? Yes X No ___ Custody Seals? Yes_____ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.1	1.3					
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good →						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: MS : 3/16/18 @ 14:19

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes ___ No X Comments: labels vary MW15-20P-20180315, matched by time. 250 poly reads MW5-D180514, COC reads MW5-20180514

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes___No___NA_____

Comments:

Additional Information: label reads MW45-20180314, COC reads MW2-45-20180314. label reads MW15-175L-20180315, COC reads MW15-175L20180515, label reads MW-235-20180315, COC reads MW-235-20180515.

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

MS

Apex Laboratories

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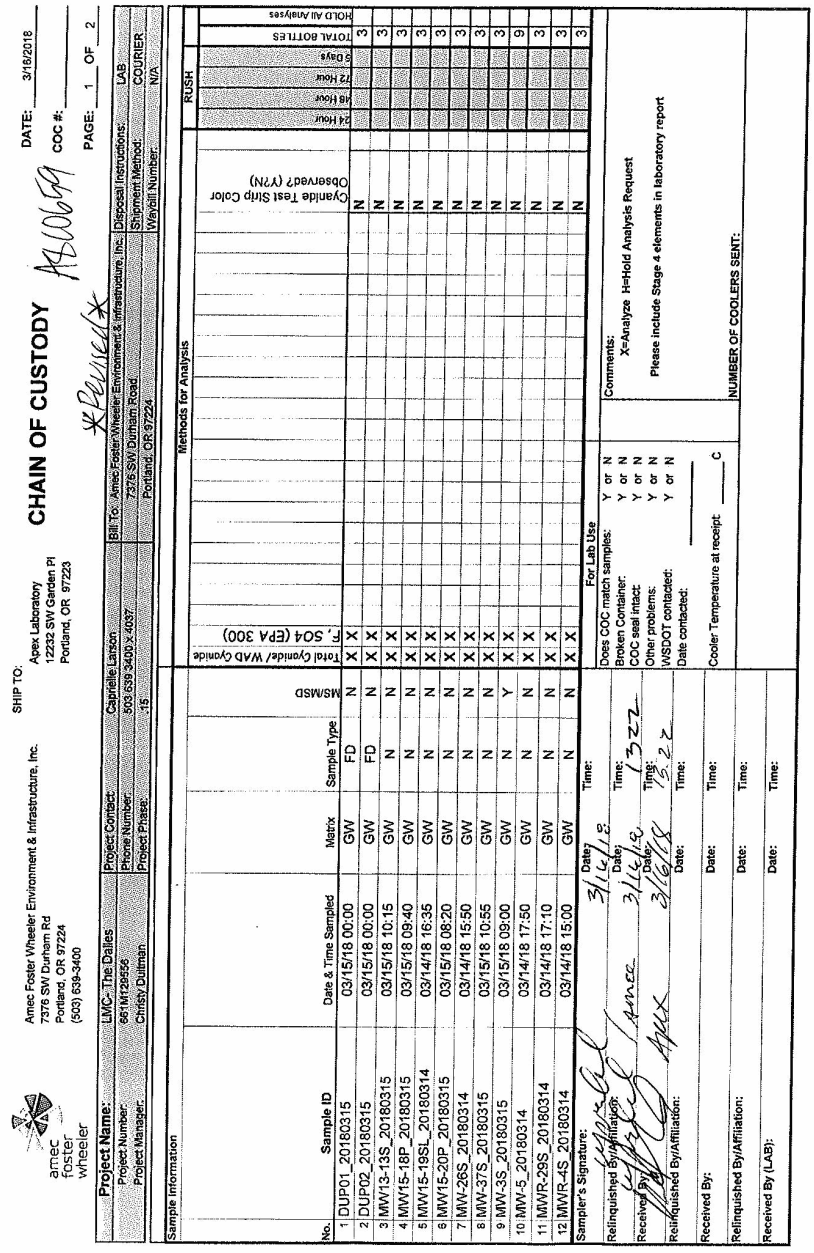
Lisa A Domenighini

Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09



amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure, Inc.
7376 SW Durham Rd
Portland, OR 97224
(503) 639-3400

SHIP TO:
Apex Laboratory
12232 SW Garden Pl
Portland, OR 97223

CHAIN OF CUSTODY

DATE: 3/16/2018
COC #:
PAGE: 1 OF 2

Project Name:	LMC The Dalles	Project Contact:	Capriellel Larson
Project Number:	661M129556	Phone Number:	503.639.3400 x 4037
Project Manager:	Christy Duitman	Project Phase:	15

Bill To: Amec Foster Wheeler Environment & Infrastructure, Inc.
7376 SW Durham Road
Portland, OR 97224

Disposal Instructions: LAB
Shipment Method: COURIER
Waybill Number: N/A

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Cyanide/ WAD Cyanide F, 504 (EPA 300)	Cyanide Test Strip Color Observed? (Y/N)	RUSH 24 Hour	48 Hour	72 Hour	5 Days	TOTAL BOTTLES	HOLD All Analyses
1	DUP01_20180315	03/15/18 00:00	GW	FD	N	X X	N					3	
2	DUP02_20180315	03/15/18 00:00	GW	FD	N	X X	N					3	
3	MW13-13S_20180315	03/15/18 10:15	GW	N	N	X X	N					3	
4	MW15-18P_20180315	03/15/18 09:40	GW	N	N	X X	N					3	
5	MW15-19SL_20180314	03/14/18 16:35	GW	N	N	X X	N					3	
6	MW15-20P_20180315	03/15/18 08:20	GW	N	N	X X	N					3	
7	MW-26S_20180314	03/14/18 15:50	GW	N	N	X X	N					3	
8	MW-37S_20180315	03/15/18 10:55	GW	N	N	X X	N					3	
9	MW-3S_20180315	03/15/18 09:00	GW	N	Y	X X	N					3	
10	MW-5_20180314	03/14/18 17:50	GW	N	N	X X	N					9	
11	MWR-29S_20180314	03/14/18 17:10	GW	N	N	X X	N					3	
12	MWR-4S_20180314	03/14/18 15:00	GW	N	N	X X	N					3	
												3	

Methods for Analysis

Sample Information

Sampler's Signature: Date: Time:

Relinquished By/Affiliation: Date: 3/16/18 Time:
Received By: Date: 3/16/18 Time: 1322
Relinquished By/Affiliation: Date: 3/16/18 Time: 1622
Received By: Date: Time:
Relinquished By/Affiliation: Date: Time:
Received By (LAB): Date: Time:

For Lab Use

Does COC match samples: Y or N
Broken Container: Y or N
COC seal intact: Y or N
Other problems: Y or N
WSDOT contacted: Y or N
Date contacted:
Cooler Temperature at receipt: ____ C

Comments:
X=Analyze H=Hold Analysis Request
Please include Stage 4 elements in laboratory report

NUMBER OF COOLERS SENT:

Apex Laboratories

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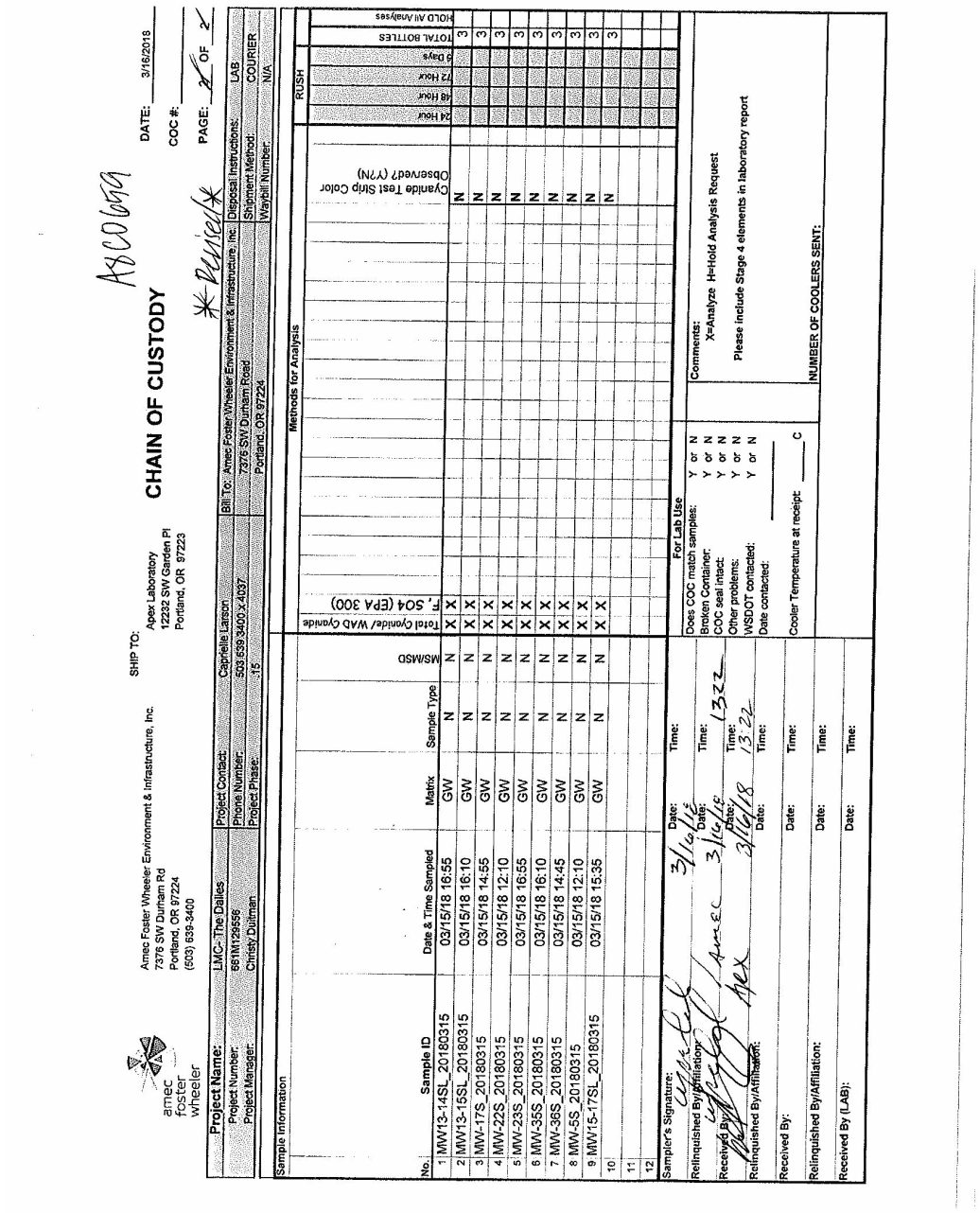
Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-13	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/30/18 09:09



Apex Laboratories

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Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, March 29, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556-01

Enclosed are the results of analyses for work order A8C0658, which was received by the laboratory on 3/16/2018 at 1:22:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LS-1_20180316	A8C0658-01	Water	03/16/18 08:55	03/16/18 13:22
LS-2_20180316	A8C0658-02	Water	03/16/18 08:25	03/16/18 13:22
MH-2_20180316	A8C0658-03	Water	03/16/18 08:00	03/16/18 13:22
MH-4_20180316	A8C0658-04	Water	03/16/18 07:30	03/16/18 13:22

Apex Laboratories

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Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LS-1_20180316 (A8C0658-01)			**Matrix: Water**					
Batch: 8030928								
Sulfate	**177**	---	10.0	mg/L	10	03/20/18 15:24	EPA 300.0	
LS-2_20180316 (A8C0658-02)			**Matrix: Water**					
Batch: 8030981								
Sulfate	**209**	---	10.0	mg/L	10	03/21/18 23:58	EPA 300.0	
MH-2_20180316 (A8C0658-03)			**Matrix: Water**					
Batch: 8030981								
Sulfate	**109**	---	10.0	mg/L	10	03/22/18 00:20	EPA 300.0	
MH-4_20180316 (A8C0658-04)			**Matrix: Water**					
Batch: 8030981								
Sulfate	**105**	---	10.0	mg/L	10	03/22/18 00:41	EPA 300.0	

Apex Laboratories



Lisa Domenighini For Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LS-1_20180316 (A8C0658-01)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**9.94**	---	0.100	mg/L	1	03/22/18 20:22	EPA 300.0-LL	
LS-2_20180316 (A8C0658-02)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**9.60**	---	0.100	mg/L	1	03/22/18 20:43	EPA 300.0-LL	
MH-2_20180316 (A8C0658-03)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**14.6**	---	0.100	mg/L	1	03/22/18 21:05	EPA 300.0-LL	
MH-4_20180316 (A8C0658-04)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**15.9**	---	0.100	mg/L	1	03/22/18 21:26	EPA 300.0-LL	

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LS-1_20180316 (A8C0658-01RE1)			**Matrix: Water**		**Batch: 8030927**			
Cyanide, Total	**1.78**	0.0250	0.0250	mg/L	5	03/20/18 14:01	EPA 335.4	
LS-2_20180316 (A8C0658-02RE1)			**Matrix: Water**		**Batch: 8030927**			
Cyanide, Total	**2.42**	0.0500	0.0500	mg/L	10	03/20/18 14:03	EPA 335.4	
MH-2_20180316 (A8C0658-03RE1)			**Matrix: Water**		**Batch: 8030927**			
Cyanide, Total	**0.853**	0.0100	0.0100	mg/L	2	03/20/18 14:05	EPA 335.4	
MH-4_20180316 (A8C0658-04RE1)			**Matrix: Water**		**Batch: 8030927**			
Cyanide, Total	**2.43**	0.0500	0.0500	mg/L	10	03/20/18 14:07	EPA 335.4	

Apex Laboratories

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Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LS-1_20180316 (A8C0658-01)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	**0.0497**	---	0.00500	mg/L	1	03/27/18 10:57	SM 4500-CN I	
LS-2_20180316 (A8C0658-02)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	**0.0617**	---	0.00500	mg/L	1	03/27/18 11:05	SM 4500-CN I	
MH-2_20180316 (A8C0658-03)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	**0.0291**	---	0.00500	mg/L	1	03/27/18 11:07	SM 4500-CN I	
MH-4_20180316 (A8C0658-04)			**Matrix: Water**		**Batch: 8031200**			
Cyanide, WAD	**0.0523**	---	0.00500	mg/L	1	03/27/18 11:09	SM 4500-CN I	

Apex Laboratories

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Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030928 - Method Prep: Aq									Water			
Blank (8030928-BLK1)					Prepared: 03/20/18 07:05		Analyzed: 03/20/18 08:56					
EPA 300.0												
Sulfate	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
LCS (8030928-BS1)					Prepared: 03/20/18 07:05		Analyzed: 03/20/18 09:18					
EPA 300.0												
Sulfate	7.82	---	1.00	mg/L	1	8.00	---	98	90-110%	---	---	
Batch 8030981 - Method Prep: Aq									Water			
Blank (8030981-BLK1)					Prepared: 03/21/18 09:13		Analyzed: 03/21/18 10:20					
EPA 300.0												
Sulfate	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
LCS (8030981-BS1)					Prepared: 03/21/18 09:13		Analyzed: 03/21/18 10:42					
EPA 300.0												
Sulfate	7.85	---	1.00	mg/L	1	8.00	---	98	90-110%	---	---	

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Lisa Domenighini For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031046 - Method Prep: Aq									**Water**			
Blank (8031046-BLK1)					Prepared: 03/22/18 11:16		Analyzed: 03/22/18 18:13					
EPA 300.0-LL												
Fluoride	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
LCS (8031046-BS1)					Prepared: 03/22/18 11:16		Analyzed: 03/22/18 18:34					
EPA 300.0-LL												
Fluoride	1.45	---	0.100	mg/L	1	1.50	---	96	90-110%	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030927 - Method Prep: Aq							**Water**					
Blank (8030927-BLK1)					Prepared: 03/20/18 07:00		Analyzed: 03/20/18 12:31					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030927-BS1)					Prepared: 03/20/18 07:00		Analyzed: 03/20/18 12:33					
EPA 335.4												
Cyanide, Total	0.242	0.00500	0.00500	mg/L	1	0.250	---	97	85-115%	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031200 - Method Prep: Aq									Water			
Blank (8031200-BLK1)					Prepared: 03/27/18 06:30		Analyzed: 03/27/18 11:59					
SM 4500-CN I												
Cyanide, WAD	ND	---	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031200-BS1)					Prepared: 03/27/18 06:30		Analyzed: 03/27/18 10:55					
SM 4500-CN I												
Cyanide, WAD	0.246	---	0.00500	mg/L	1	0.250	---	98	85-115%	---	---	

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7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030928							
A8C0658-01	Water	EPA 300.0	03/16/18 08:55	03/20/18 07:05	5mL/5mL	5mL/5mL	1.00
Batch: 8030981							
A8C0658-02	Water	EPA 300.0	03/16/18 08:25	03/21/18 09:13	5mL/5mL	5mL/5mL	1.00
A8C0658-03	Water	EPA 300.0	03/16/18 08:00	03/21/18 09:13	5mL/5mL	5mL/5mL	1.00
A8C0658-04	Water	EPA 300.0	03/16/18 07:30	03/21/18 09:13	5mL/5mL	5mL/5mL	1.00

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031046							
A8C0658-01	Water	EPA 300.0-LL	03/16/18 08:55	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0658-02	Water	EPA 300.0-LL	03/16/18 08:25	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0658-03	Water	EPA 300.0-LL	03/16/18 08:00	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00
A8C0658-04	Water	EPA 300.0-LL	03/16/18 07:30	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030927							
A8C0658-01RE1	Water	EPA 335.4	03/16/18 08:55	03/20/18 07:00	6mL/6mL	6mL/6mL	1.00
A8C0658-02RE1	Water	EPA 335.4	03/16/18 08:25	03/20/18 07:00	6mL/6mL	6mL/6mL	1.00
A8C0658-03RE1	Water	EPA 335.4	03/16/18 08:00	03/20/18 07:00	6mL/6mL	6mL/6mL	1.00
A8C0658-04RE1	Water	EPA 335.4	03/16/18 07:30	03/20/18 07:00	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031200							
A8C0658-01	Water	SM 4500-CN I	03/16/18 08:55	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0658-02	Water	SM 4500-CN I	03/16/18 08:25	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0658-03	Water	SM 4500-CN I	03/16/18 08:00	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00
A8C0658-04	Water	SM 4500-CN I	03/16/18 07:30	03/27/18 06:30	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).



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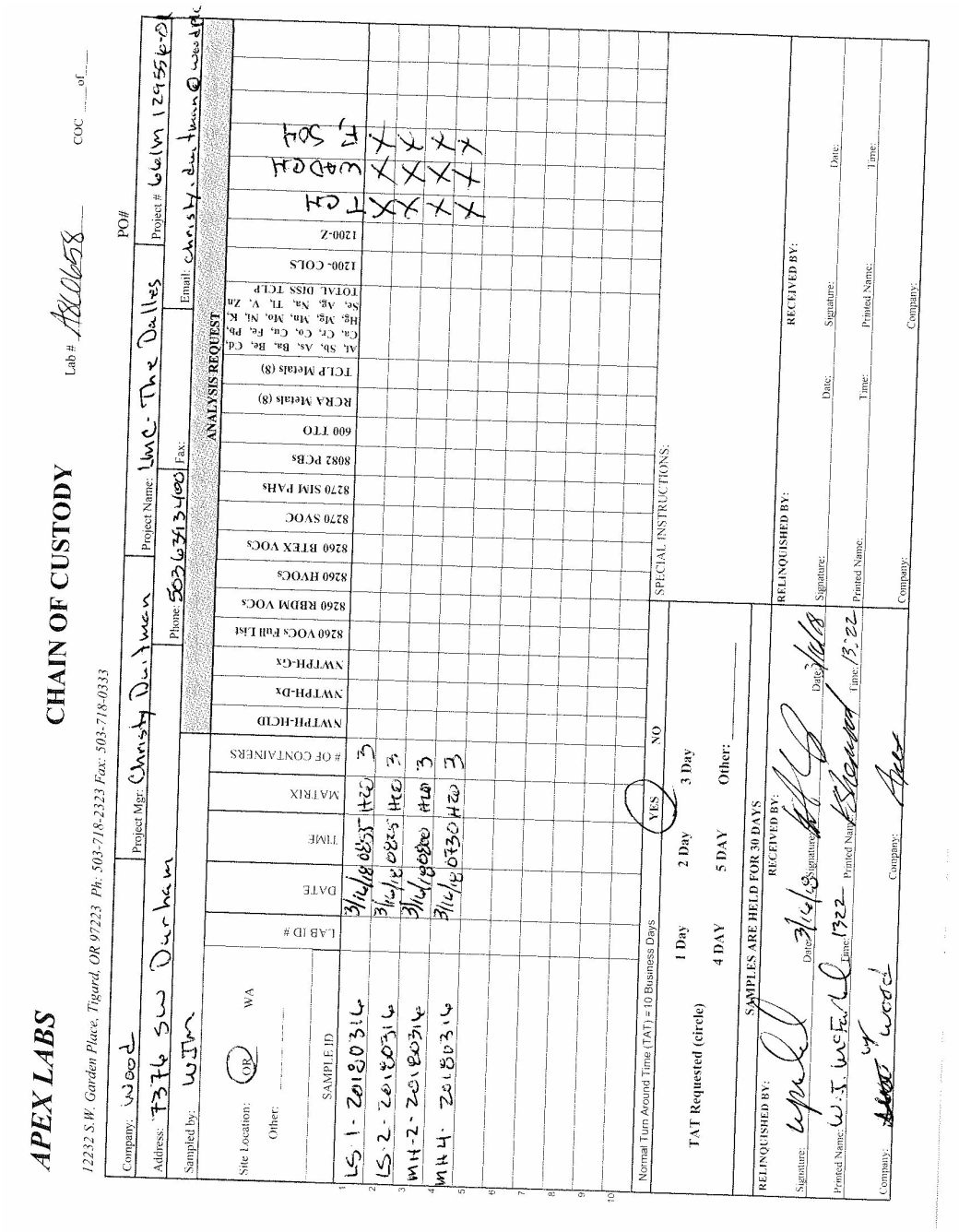
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15



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Lisa Domenighini For Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/29/18 14:15

APEX LABS COOLER RECEIPT FORM

Client: Wood Element WO#: A8 C0658

Project/Project #: LMC The Dalles / 661M129556

Delivery info:

Date/Time Received: 3/16/18 @ WMJ By: 13:22

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: WMJ : 3/16/18 @ 13:23

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.1	1.3					
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good →						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: WMJ : 3/16/18 @ 3/15:55 WMJ 3/16

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes X No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___ NA___

Comments:

Additional Information:

Labeled by: B Witness: AM Cooler Inspected by: WMJ See Project Contact Form: Y

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini For Philip Nerenberg, Lab Director

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Friday, April 6, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.15

Enclosed are the results of analyses for work order A8C0924, which was received by the laboratory on 3/23/2018 at 10:40:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DUP03_20180319	A8C0924-01	Water	03/19/18 00:00	03/23/18 10:40
DUP04_20180320	A8C0924-02	Water	03/20/18 00:00	03/23/18 10:40
DUP05_20180320	A8C0924-03	Water	03/20/18 00:00	03/23/18 10:40
MW13-01P_20180319	A8C0924-04	Water	03/19/18 12:30	03/23/18 10:40
MW13-01S_20180319	A8C0924-05	Water	03/19/18 13:05	03/23/18 10:40
MW13-05P_20180319	A8C0924-06	Water	03/19/18 14:25	03/23/18 10:40
MW13-07P_20180319	A8C0924-07	Water	03/19/18 16:40	03/23/18 10:40
MW13-08P_20180319	A8C0924-08	Water	03/19/18 15:15	03/23/18 10:40
MW13-08S_20180319	A8C0924-09	Water	03/19/18 15:55	03/23/18 10:40
MW13-12P_20180320	A8C0924-10	Water	03/20/18 08:30	03/23/18 10:40
MW-42S_20180319	A8C0924-11	Water	03/19/18 13:40	03/23/18 10:40
MWR-27S_20180320	A8C0924-12	Water	03/20/18 09:10	03/23/18 10:40
DUP06_20180321	A8C0924-13	Water	03/21/18 00:00	03/23/18 10:40
MW13-02P_20180320	A8C0924-14	Water	03/20/18 14:00	03/23/18 10:40
MW13-02S_20180320	A8C0924-15	Water	03/20/18 14:35	03/23/18 10:40
MW13-06A_20180321	A8C0924-16	Water	03/21/18 08:30	03/23/18 10:40
MW13-06P_20180320	A8C0924-17	Water	03/20/18 09:50	03/23/18 10:40
MW13-06S_20180320	A8C0924-18	Water	03/20/18 10:30	03/23/18 10:40
MW13-10P_20180320	A8C0924-19	Water	03/20/18 13:00	03/23/18 10:40
MW13-11S_20180320	A8C0924-20	Water	03/20/18 12:15	03/23/18 10:40
MW-2S_20180320	A8C0924-21	Water	03/20/18 17:05	03/23/18 10:40
MW-38S_20180320	A8C0924-22	Water	03/20/18 15:20	03/23/18 10:40
MW-6AA_20180320	A8C0924-23	Water	03/20/18 16:05	03/23/18 10:40
MWR-15S_20180320	A8C0924-24	Water	03/20/18 11:15	03/23/18 10:40
EB01_20180321	A8C0924-25	Water	03/21/18 08:35	03/23/18 10:40
EB02_20180321	A8C0924-26	Water	03/21/18 12:35	03/23/18 10:40
MW13-02A_20180321	A8C0924-27	Water	03/21/18 11:30	03/23/18 10:40
MW13-03P_20180321	A8C0924-28	Water	03/21/18 17:00	03/23/18 10:40
MW13-04P_20180321	A8C0924-29	Water	03/21/18 14:45	03/23/18 10:40
MW13-16S_20180321	A8C0924-30	Water	03/21/18 10:45	03/23/18 10:40
MW-39S_20180321	A8C0924-31	Water	03/21/18 17:40	03/23/18 10:40
MW-40S_20180321	A8C0924-32	Water	03/21/18 15:30	03/23/18 10:40
MW-41S_20180321	A8C0924-33	Water	03/21/18 13:20	03/23/18 10:40
MWR-13A_20180321	A8C0924-34	Water	03/21/18 16:10	03/23/18 10:40
MWR-2A_20180321	A8C0924-35	Water	03/21/18 12:30	03/23/18 10:40

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MWR-7A_20180321	A8C0924-36	Water	03/21/18 14:00	03/23/18 10:40
MW-12A_20180321	A8C0924-37	Water	03/21/18 18:20	03/23/18 10:40

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
DUP03_20180319 (A8C0924-01)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**129**	10.0	10.0	mg/L	10	04/03/18 11:07	EPA 300.0	
DUP04_20180320 (A8C0924-02RE1)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**601**	20.0	20.0	mg/L	20	04/04/18 02:33	EPA 300.0	
DUP05_20180320 (A8C0924-03)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**15.0**	1.00	1.00	mg/L	1	04/03/18 11:50	EPA 300.0	
MW13-01P_20180319 (A8C0924-04)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**130**	10.0	10.0	mg/L	10	04/03/18 12:12	EPA 300.0	
MW13-01S_20180319 (A8C0924-05)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**41.5**	2.00	2.00	mg/L	2	04/03/18 13:16	EPA 300.0	
MW13-05P_20180319 (A8C0924-06)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**79.5**	5.00	5.00	mg/L	5	04/03/18 13:38	EPA 300.0	
MW13-07P_20180319 (A8C0924-07)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**86.6**	5.00	5.00	mg/L	5	04/03/18 13:59	EPA 300.0	
MW13-08P_20180319 (A8C0924-08)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**787**	20.0	20.0	mg/L	20	04/03/18 09:41	EPA 300.0	
MW13-08S_20180319 (A8C0924-09)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**382**	10.0	10.0	mg/L	10	04/03/18 14:21	EPA 300.0	
MW13-12P_20180320 (A8C0924-10)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**162**	10.0	10.0	mg/L	10	04/03/18 14:42	EPA 300.0	
MW-42S_20180319 (A8C0924-11)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**7.85**	1.00	1.00	mg/L	1	04/03/18 15:04	EPA 300.0	
MWR-27S_20180320 (A8C0924-12)			**Matrix: Water**					

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MWR-27S_20180320 (A8C0924-12)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**91.5**	5.00	5.00	mg/L	5	04/03/18 16:09	EPA 300.0	
DUP06_20180321 (A8C0924-13)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**20.5**	1.00	1.00	mg/L	1	04/03/18 16:30	EPA 300.0	
MW13-02P_20180320 (A8C0924-14)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**99.8**	10.0	10.0	mg/L	10	04/03/18 17:35	EPA 300.0	
MW13-02S_20180320 (A8C0924-15)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**14.9**	1.00	1.00	mg/L	1	04/03/18 17:56	EPA 300.0	
MW13-06A_20180321 (A8C0924-16)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**61.5**	2.00	2.00	mg/L	2	04/03/18 18:18	EPA 300.0	
MW13-06P_20180320 (A8C0924-17)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**590**	20.0	20.0	mg/L	20	04/03/18 18:39	EPA 300.0	
MW13-06S_20180320 (A8C0924-18)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**331**	20.0	20.0	mg/L	20	04/03/18 19:01	EPA 300.0	
MW13-10P_20180320 (A8C0924-19)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**150**	10.0	10.0	mg/L	10	04/03/18 19:22	EPA 300.0	
MW13-11S_20180320 (A8C0924-20)			**Matrix: Water**					
Batch: 8040397								
Sulfate	**47.9**	2.00	2.00	mg/L	2	04/03/18 19:44	EPA 300.0	
MW-2S_20180320 (A8C0924-21)			**Matrix: Water**					
Batch: 8040405								
Sulfate	**21.1**	1.00	1.00	mg/L	1	04/03/18 20:48	EPA 300.0	
MW-38S_20180320 (A8C0924-22)			**Matrix: Water**					
Batch: 8040405								
Sulfate	**18.5**	1.00	1.00	mg/L	1	04/03/18 22:36	EPA 300.0	
MW-6AA_20180320 (A8C0924-23)			**Matrix: Water**					

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-6AA_20180320 (A8C0924-23)			**Matrix: Water**					
Batch: 8040405								
Sulfate	**39.7**	1.00	1.00	mg/L	1	04/03/18 22:58	EPA 300.0	
MWR-15S_20180320 (A8C0924-24)			**Matrix: Water**					
Batch: 8040405								
Sulfate	**124**	5.00	5.00	mg/L	5	04/03/18 23:19	EPA 300.0	
EB01_20180321 (A8C0924-25)			**Matrix: Water**					
Batch: 8040405								
Sulfate	ND	1.00	1.00	mg/L	1	04/03/18 23:41	EPA 300.0	
EB02_20180321 (A8C0924-26)			**Matrix: Water**					
Batch: 8040405								
Sulfate	ND	1.00	1.00	mg/L	1	04/04/18 00:02	EPA 300.0	
MW13-02A_20180321 (A8C0924-27)			**Matrix: Water**					
Batch: 8040405								
Sulfate	**10.9**	1.00	1.00	mg/L	1	04/04/18 00:24	EPA 300.0	
MW13-03P_20180321 (A8C0924-28)			**Matrix: Water**					
Batch: 8040405								
Sulfate	**10.8**	1.00	1.00	mg/L	1	04/04/18 00:45	EPA 300.0	
MW13-04P_20180321 (A8C0924-29)			**Matrix: Water**					
Batch: 8040405								
Sulfate	**36.5**	1.00	1.00	mg/L	1	04/04/18 01:07	EPA 300.0	
MW13-16S_20180321 (A8C0924-30)			**Matrix: Water**					
Batch: 8040405								
Sulfate	**68.0**	5.00	5.00	mg/L	5	04/04/18 02:11	EPA 300.0	
MW-39S_20180321 (A8C0924-31)			**Matrix: Water**					
Batch: 8040459								
Sulfate	**8.73**	1.00	1.00	mg/L	1	04/04/18 15:56	EPA 300.0	
MW-40S_20180321 (A8C0924-32)			**Matrix: Water**					
Batch: 8040459								
Sulfate	**8.10**	1.00	1.00	mg/L	1	04/04/18 16:18	EPA 300.0	
MW-41S_20180321 (A8C0924-33)			**Matrix: Water**					
Batch: 8040459								
Sulfate	**67.1**	2.00	2.00	mg/L	2	04/04/18 16:39	EPA 300.0	
MWR-13A_20180321 (A8C0924-34)			**Matrix: Water**					

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MWR-13A_20180321 (A8C0924-34)			**Matrix: Water**					
Batch: 8040459								
Sulfate	**11.7**	1.00	1.00	mg/L	1	04/04/18 14:30	EPA 300.0	
MWR-2A_20180321 (A8C0924-35)			**Matrix: Water**					
Batch: 8040459								
Sulfate	**11.4**	1.00	1.00	mg/L	1	04/04/18 17:01	EPA 300.0	
MWR-7A_20180321 (A8C0924-36)			**Matrix: Water**					
Batch: 8040459								
Sulfate	**20.3**	1.00	1.00	mg/L	1	04/04/18 18:06	EPA 300.0	
MW-12A_20180321 (A8C0924-37)			**Matrix: Water**					
Batch: 8040459								
Sulfate	**53.1**	2.00	2.00	mg/L	2	04/04/18 18:27	EPA 300.0	

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Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
DUP03_20180319 (A8C0924-01)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**20.0**	0.100	0.100	mg/L	1	03/31/18 00:57	EPA 300.0-LL	
DUP04_20180320 (A8C0924-02)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**4.02**	0.100	0.100	mg/L	1	03/31/18 01:19	EPA 300.0-LL	
DUP05_20180320 (A8C0924-03)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.626**	0.100	0.100	mg/L	1	03/31/18 01:40	EPA 300.0-LL	
MW13-01P_20180319 (A8C0924-04)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**19.9**	0.100	0.100	mg/L	1	03/31/18 02:02	EPA 300.0-LL	
MW13-01S_20180319 (A8C0924-05)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.759**	0.100	0.100	mg/L	1	03/31/18 02:23	EPA 300.0-LL	
MW13-05P_20180319 (A8C0924-06)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**4.00**	0.100	0.100	mg/L	1	03/31/18 03:28	EPA 300.0-LL	
MW13-07P_20180319 (A8C0924-07RE1)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**105**	0.500	0.500	mg/L	5	04/03/18 00:46	EPA 300.0-LL	
MW13-08P_20180319 (A8C0924-08RE1)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**5.18**	0.100	0.100	mg/L	1	04/02/18 23:20	EPA 300.0-LL	
MW13-08S_20180319 (A8C0924-09)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.416**	0.100	0.100	mg/L	1	03/31/18 04:11	EPA 300.0-LL	
MW13-12P_20180320 (A8C0924-10)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**13.6**	0.100	0.100	mg/L	1	03/31/18 04:32	EPA 300.0-LL	
MW-42S_20180319 (A8C0924-11)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.847**	0.100	0.100	mg/L	1	03/31/18 04:54	EPA 300.0-LL	
MWR-27S_20180320 (A8C0924-12)			**Matrix: Water**					

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MWR-27S_20180320 (A8C0924-12)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.363**	0.100	0.100	mg/L	1	03/31/18 05:15	EPA 300.0-LL	
DUP06_20180321 (A8C0924-13)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.758**	0.100	0.100	mg/L	1	03/31/18 05:37	EPA 300.0-LL	
MW13-02P_20180320 (A8C0924-14)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**6.84**	0.100	0.100	mg/L	1	03/31/18 05:58	EPA 300.0-LL	
MW13-02S_20180320 (A8C0924-15)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.630**	0.100	0.100	mg/L	1	03/31/18 06:20	EPA 300.0-LL	
MW13-06A_20180321 (A8C0924-16)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.551**	0.100	0.100	mg/L	1	03/31/18 06:41	EPA 300.0-LL	
MW13-06P_20180320 (A8C0924-17)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**3.95**	0.100	0.100	mg/L	1	03/31/18 07:46	EPA 300.0-LL	
MW13-06S_20180320 (A8C0924-18)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**2.39**	0.100	0.100	mg/L	1	03/31/18 08:08	EPA 300.0-LL	
MW13-10P_20180320 (A8C0924-19)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**2.37**	0.100	0.100	mg/L	1	03/31/18 08:30	EPA 300.0-LL	
MW13-11S_20180320 (A8C0924-20)			**Matrix: Water**					
Batch: 8031377								
Fluoride	**0.499**	0.100	0.100	mg/L	1	03/31/18 08:51	EPA 300.0-LL	
MW-2S_20180320 (A8C0924-21)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.132**	0.100	0.100	mg/L	1	04/02/18 16:09	EPA 300.0-LL	
MW-38S_20180320 (A8C0924-22)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**5.34**	0.100	0.100	mg/L	1	04/02/18 16:31	EPA 300.0-LL	
MW-6AA_20180320 (A8C0924-23)			**Matrix: Water**					

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Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-6AA_20180320 (A8C0924-23)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.667**	0.100	0.100	mg/L	1	04/02/18 16:52	EPA 300.0-LL	
MWR-15S_20180320 (A8C0924-24)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.906**	0.100	0.100	mg/L	1	04/02/18 17:14	EPA 300.0-LL	
EB01_20180321 (A8C0924-25)			**Matrix: Water**					
Batch: 8040366								
Fluoride	ND	0.100	0.100	mg/L	1	04/02/18 18:19	EPA 300.0-LL	
EB02_20180321 (A8C0924-26)			**Matrix: Water**					
Batch: 8040366								
Fluoride	ND	0.100	0.100	mg/L	1	04/02/18 18:40	EPA 300.0-LL	
MW13-02A_20180321 (A8C0924-27)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.890**	0.100	0.100	mg/L	1	04/02/18 19:02	EPA 300.0-LL	
MW13-03P_20180321 (A8C0924-28)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.234**	0.100	0.100	mg/L	1	04/02/18 19:23	EPA 300.0-LL	
MW13-04P_20180321 (A8C0924-29)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**11.3**	0.100	0.100	mg/L	1	04/02/18 19:45	EPA 300.0-LL	
MW13-16S_20180321 (A8C0924-30)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.472**	0.100	0.100	mg/L	1	04/02/18 20:06	EPA 300.0-LL	
MW-39S_20180321 (A8C0924-31)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.523**	0.100	0.100	mg/L	1	04/02/18 20:28	EPA 300.0-LL	
MW-40S_20180321 (A8C0924-32)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.553**	0.100	0.100	mg/L	1	04/02/18 20:49	EPA 300.0-LL	
MW-41S_20180321 (A8C0924-33)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.379**	0.100	0.100	mg/L	1	04/02/18 21:11	EPA 300.0-LL	
MWR-13A_20180321 (A8C0924-34)			**Matrix: Water**					

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Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MWR-13A_20180321 (A8C0924-34)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.487**	0.100	0.100	mg/L	1	04/02/18 14:43	EPA 300.0-LL	
MWR-2A_20180321 (A8C0924-35)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.287**	0.100	0.100	mg/L	1	04/02/18 21:32	EPA 300.0-LL	
MWR-7A_20180321 (A8C0924-36)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.768**	0.100	0.100	mg/L	1	04/02/18 22:37	EPA 300.0-LL	
MW-12A_20180321 (A8C0924-37)			**Matrix: Water**					
Batch: 8040366								
Fluoride	**0.633**	0.100	0.100	mg/L	1	04/02/18 22:58	EPA 300.0-LL	

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
DUP03_20180319 (A8C0924-01RE1)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	**52.0**	5.00	5.00	mg/L	1000	03/27/18 13:59	EPA 335.4	
DUP04_20180320 (A8C0924-02RE2)			**Matrix: Water**		**Batch: 8031320**			
Cyanide, Total	**1.96**	0.0500	0.0500	mg/L	10	03/29/18 15:43	EPA 335.4	
DUP05_20180320 (A8C0924-03)			**Matrix: Water**		**Batch: 8031320**			
Cyanide, Total	**0.0562**	0.00500	0.00500	mg/L	1	03/29/18 14:17	EPA 335.4	
MW13-01P_20180319 (A8C0924-04RE1)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	**47.7**	5.00	5.00	mg/L	1000	03/27/18 14:07	EPA 335.4	
MW13-01S_20180319 (A8C0924-05RE1)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	**0.799**	0.0500	0.0500	mg/L	10	03/27/18 14:09	EPA 335.4	
MW13-05P_20180319 (A8C0924-06RE3)			**Matrix: Water**		**Batch: 8031320**			
Cyanide, Total	**0.499**	0.0100	0.0100	mg/L	2	03/29/18 15:45	EPA 335.4	
MW13-07P_20180319 (A8C0924-07RE2)			**Matrix: Water**		**Batch: 8031320**			
Cyanide, Total	**8.55**	0.500	0.500	mg/L	100	03/29/18 15:17	EPA 335.4	
MW13-08P_20180319 (A8C0924-08RE3)			**Matrix: Water**		**Batch: 8031320**			
Cyanide, Total	**1.08**	0.0500	0.0500	mg/L	10	03/29/18 15:19	EPA 335.4	
MW13-08S_20180319 (A8C0924-09RE2)			**Matrix: Water**		**Batch: 8031320**			
Cyanide, Total	**0.685**	0.0500	0.0500	mg/L	10	03/29/18 15:27	EPA 335.4	
MW13-12P_20180320 (A8C0924-10RE1)			**Matrix: Water**		**Batch: 8031320**			
Cyanide, Total	**0.146**	0.00500	0.00500	mg/L	1	03/29/18 15:29	EPA 335.4	
MW-42S_20180319 (A8C0924-11RE1)			**Matrix: Water**		**Batch: 8031320**			
Cyanide, Total	**0.466**	0.00500	0.00500	mg/L	1	03/29/18 15:31	EPA 335.4	
MWR-27S_20180320 (A8C0924-12RE1)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**5.31**	0.500	0.500	mg/L	100	03/30/18 14:17	EPA 335.4	
DUP06_20180321 (A8C0924-13)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.320**	0.00500	0.00500	mg/L	1	03/30/18 12:07	EPA 335.4	
MW13-02P_20180320 (A8C0924-14)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	**0.130**	0.00500	0.00500	mg/L	1	03/27/18 13:25	EPA 335.4	
MW13-02S_20180320 (A8C0924-15)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	**0.0665**	0.00500	0.00500	mg/L	1	03/27/18 13:27	EPA 335.4	
MW13-06A_20180321 (A8C0924-16RE1)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.677**	0.0500	0.0500	mg/L	10	03/30/18 14:19	EPA 335.4	

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Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW13-06P_20180320 (A8C0924-17RE1)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	**2.15**	0.0500	0.0500	mg/L	10	03/27/18 14:11	EPA 335.4	
MW13-06S_20180320 (A8C0924-18RE1)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	**2.15**	0.0500	0.0500	mg/L	10	03/27/18 14:13	EPA 335.4	
MW13-10P_20180320 (A8C0924-19RE1)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/27/18 14:15	EPA 335.4	
MW13-11S_20180320 (A8C0924-20)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/27/18 13:41	EPA 335.4	
MW-2S_20180320 (A8C0924-21RE2)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.00760**	0.00500	0.00500	mg/L	1	03/30/18 14:21	EPA 335.4	
MW-38S_20180320 (A8C0924-22RE1)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.397**	0.00500	0.00500	mg/L	1	03/30/18 12:13	EPA 335.4	
MW-6AA_20180320 (A8C0924-23RE2)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.478**	0.00500	0.00500	mg/L	1	03/30/18 12:15	EPA 335.4	
MWR-15S_20180320 (A8C0924-24RE1)			**Matrix: Water**		**Batch: 8031210**			
Cyanide, Total	**4.41**	0.100	0.100	mg/L	20	03/27/18 14:19	EPA 335.4	
EB01_20180321 (A8C0924-25RE1)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/30/18 14:23	EPA 335.4	
EB02_20180321 (A8C0924-26)			**Matrix: Water**		**Batch: 8031345**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/30/18 12:59	EPA 335.4	
MW13-02A_20180321 (A8C0924-27)			**Matrix: Water**		**Batch: 8031345**			
Cyanide, Total	**0.0200**	0.00500	0.00500	mg/L	1	03/30/18 13:01	EPA 335.4	
MW13-03P_20180321 (A8C0924-28)			**Matrix: Water**		**Batch: 8031345**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/30/18 13:03	EPA 335.4	
MW13-04P_20180321 (A8C0924-29)			**Matrix: Water**		**Batch: 8031345**			
Cyanide, Total	**0.101**	0.00500	0.00500	mg/L	1	03/30/18 13:05	EPA 335.4	
MW13-16S_20180321 (A8C0924-30)			**Matrix: Water**		**Batch: 8031345**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/30/18 13:07	EPA 335.4	
MW-39S_20180321 (A8C0924-31)			**Matrix: Water**		**Batch: 8031345**			
Cyanide, Total	**0.00890**	0.00500	0.00500	mg/L	1	03/30/18 13:09	EPA 335.4	
MW-40S_20180321 (A8C0924-32)			**Matrix: Water**		**Batch: 8031344**			

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-40S_20180321 (A8C0924-32)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.166**	0.00500	0.00500	mg/L	1	03/30/18 12:19	EPA 335.4	
MW-41S_20180321 (A8C0924-33)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.372**	0.00500	0.00500	mg/L	1	03/30/18 12:27	EPA 335.4	
MWR-13A_20180321 (A8C0924-34)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.00970**	0.00500	0.00500	mg/L	1	03/30/18 12:29	EPA 335.4	
MWR-2A_20180321 (A8C0924-35)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/30/18 12:37	EPA 335.4	
MWR-7A_20180321 (A8C0924-36)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.277**	0.00500	0.00500	mg/L	1	03/30/18 12:39	EPA 335.4	
MW-12A_20180321 (A8C0924-37)			**Matrix: Water**		**Batch: 8031344**			
Cyanide, Total	**0.0541**	0.00500	0.00500	mg/L	1	03/30/18 12:41	EPA 335.4	

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
DUP03_20180319 (A8C0924-01RE1)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**0.945**	0.0500	0.0500	mg/L	10	03/27/18 13:55	SM 4500-CN I	
DUP04_20180320 (A8C0924-02RE1)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.0629**	0.00500	0.00500	mg/L	1	03/28/18 15:05	SM 4500-CN I	
DUP05_20180320 (A8C0924-03)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.00730**	0.00500	0.00500	mg/L	1	03/28/18 13:25	SM 4500-CN I	
MW13-01P_20180319 (A8C0924-04RE1)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**1.24**	0.0500	0.0500	mg/L	10	03/27/18 13:57	SM 4500-CN I	
MW13-01S_20180319 (A8C0924-05)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**0.0789**	0.00500	0.00500	mg/L	1	03/27/18 12:31	SM 4500-CN I	
MW13-05P_20180319 (A8C0924-06)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**0.0197**	0.00500	0.00500	mg/L	1	03/27/18 12:33	SM 4500-CN I	
MW13-07P_20180319 (A8C0924-07)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**0.0505**	0.00500	0.00500	mg/L	1	03/27/18 12:35	SM 4500-CN I	
MW13-08P_20180319 (A8C0924-08)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**0.0212**	0.00500	0.00500	mg/L	1	03/27/18 12:37	SM 4500-CN I	
MW13-08S_20180319 (A8C0924-09)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**0.0279**	0.00500	0.00500	mg/L	1	03/27/18 12:51	SM 4500-CN I	
MW13-12P_20180320 (A8C0924-10)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.00640**	0.00500	0.00500	mg/L	1	03/28/18 13:27	SM 4500-CN I	
MW-42S_20180319 (A8C0924-11)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**0.0486**	0.00500	0.00500	mg/L	1	03/27/18 12:53	SM 4500-CN I	
MWR-27S_20180320 (A8C0924-12)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.156**	0.00500	0.00500	mg/L	1	03/28/18 13:29	SM 4500-CN I	
DUP06_20180321 (A8C0924-13)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.0225**	0.00500	0.00500	mg/L	1	03/28/18 13:31	SM 4500-CN I	
MW13-02P_20180320 (A8C0924-14)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.0100**	0.00500	0.00500	mg/L	1	03/28/18 14:45	SM 4500-CN I	
MW13-02S_20180320 (A8C0924-15)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:47	SM 4500-CN I	
MW13-06A_20180321 (A8C0924-16)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.0447**	0.00500	0.00500	mg/L	1	03/28/18 13:33	SM 4500-CN I	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW13-06P_20180320 (A8C0924-17)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.0636**	0.00500	0.00500	mg/L	1	03/28/18 13:35	SM 4500-CN I	
MW13-06S_20180320 (A8C0924-18)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.0909**	0.00500	0.00500	mg/L	1	03/28/18 13:37	SM 4500-CN I	
MW13-10P_20180320 (A8C0924-19)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 13:45	SM 4500-CN I	
MW13-11S_20180320 (A8C0924-20)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:49	SM 4500-CN I	
MW-2S_20180320 (A8C0924-21)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 13:47	SM 4500-CN I	
MW-38S_20180320 (A8C0924-22)			**Matrix: Water**		**Batch: 8031259**			
Cyanide, WAD	**0.0106**	0.00500	0.00500	mg/L	1	03/28/18 14:51	SM 4500-CN I	
MW-6AA_20180320 (A8C0924-23)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	**0.0282**	0.00500	0.00500	mg/L	1	03/28/18 13:57	SM 4500-CN I	
MWR-15S_20180320 (A8C0924-24)			**Matrix: Water**		**Batch: 8031203**			
Cyanide, WAD	**0.157**	0.00500	0.00500	mg/L	1	03/27/18 12:55	SM 4500-CN I	
EB01_20180321 (A8C0924-25)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 13:59	SM 4500-CN I	
EB02_20180321 (A8C0924-26)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:01	SM 4500-CN I	
MW13-02A_20180321 (A8C0924-27)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:53	SM 4500-CN I	
MW13-03P_20180321 (A8C0924-28)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:03	SM 4500-CN I	
MW13-04P_20180321 (A8C0924-29)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	**0.0114**	0.00500	0.00500	mg/L	1	03/28/18 14:11	SM 4500-CN I	
MW13-16S_20180321 (A8C0924-30)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:13	SM 4500-CN I	
MW-39S_20180321 (A8C0924-31)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:55	SM 4500-CN I	
MW-40S_20180321 (A8C0924-32)			**Matrix: Water**		**Batch: 8031260**			

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-40S_20180321 (A8C0924-32)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	**0.0183**	0.00500	0.00500	mg/L	1	03/28/18 14:15	SM 4500-CN I	
MW-41S_20180321 (A8C0924-33)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	**0.0226**	0.00500	0.00500	mg/L	1	03/28/18 14:17	SM 4500-CN I	
MWR-13A_20180321 (A8C0924-34)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:19	SM 4500-CN I	
MWR-2A_20180321 (A8C0924-35)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	03/28/18 14:27	SM 4500-CN I	
MWR-7A_20180321 (A8C0924-36)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	**0.00790**	0.00500	0.00500	mg/L	1	03/28/18 15:03	SM 4500-CN I	
MW-12A_20180321 (A8C0924-37)			**Matrix: Water**		**Batch: 8031260**			
Cyanide, WAD	**0.00900**	0.00500	0.00500	mg/L	1	03/28/18 14:29	SM 4500-CN I	

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8040397 - Method Prep: Aq							**Water**					
Blank (8040397-BLK1)					Prepared: 04/03/18 07:09		Analyzed: 04/03/18 08:58					
EPA 300.0												
Sulfate	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (8040397-BS1)					Prepared: 04/03/18 07:09		Analyzed: 04/03/18 09:20					
EPA 300.0												
Sulfate	7.89	1.00	1.00	mg/L	1	8.00	---	99	90-110%	---	---	
Duplicate (8040397-DUP1)					Prepared: 04/03/18 07:09		Analyzed: 04/03/18 10:03					
QC Source Sample: MW13-08P_20180319 (A8C0924-08)												
EPA 300.0												
Sulfate	**782**	20.0	20.0	mg/L	20	---	787	---	---	0.7	15%	
Duplicate (8040397-DUP2)					Prepared: 04/03/18 07:09		Analyzed: 04/03/18 15:25					
QC Source Sample: MW-42S_20180319 (A8C0924-11)												
EPA 300.0												
Sulfate	**7.82**	1.00	1.00	mg/L	1	---	7.85	---	---	0.4	15%	
Matrix Spike (8040397-MS1)					Prepared: 04/03/18 07:09		Analyzed: 04/03/18 10:24					
QC Source Sample: MW13-08P_20180319 (A8C0924-08)												
EPA 300.0												
Sulfate	1190	50.0	50.0	mg/L	50	400	787	101	80-120%	---	---	
Matrix Spike (8040397-MS2)					Prepared: 04/03/18 07:09		Analyzed: 04/03/18 15:47					
QC Source Sample: MW-42S_20180319 (A8C0924-11)												
EPA 300.0												
Sulfate	17.9	1.25	1.25	mg/L	1	10.0	7.85	100	80-120%	---	---	
Matrix Spike Dup (8040397-MSD1)					Prepared: 04/03/18 07:09		Analyzed: 04/03/18 10:46					
QC Source Sample: MW13-08P_20180319 (A8C0924-08)												
EPA 300.0												
Sulfate	1180	50.0	50.0	mg/L	50	400	787	98	80-120%	3	15%	
Batch 8040405 - Method Prep: Aq							**Water**					
Blank (8040405-BLK1)					Prepared: 04/03/18 09:01		Analyzed: 04/03/18 20:05					
EPA 300.0												
Sulfate	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8040405 - Method Prep: Aq							**Water**					
LCS (8040405-BS1)					Prepared: 04/03/18 09:01		Analyzed: 04/03/18 20:27					
EPA 300.0												
Sulfate	7.88	1.00	1.00	mg/L	1	8.00	---	99	90-110%	---	---	
Duplicate (8040405-DUP1)					Prepared: 04/03/18 09:01		Analyzed: 04/03/18 21:53					
QC Source Sample: MW-2S_20180320 (A8C0924-21)												
EPA 300.0												
Sulfate	**21.1**	1.00	1.00	mg/L	1	---	21.1	---	---	0.09	15%	
Matrix Spike (8040405-MS1)					Prepared: 04/03/18 09:01		Analyzed: 04/03/18 22:15					
QC Source Sample: MW-2S_20180320 (A8C0924-21)												
EPA 300.0												
Sulfate	31.1	1.25	1.25	mg/L	1	10.0	21.1	100	80-120%	---	---	

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8040459 - Method Prep: Aq							**Water**					
Blank (8040459-BLK1)					Prepared: 04/04/18 11:30		Analyzed: 04/04/18 13:47					
EPA 300.0												
Sulfate	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (8040459-BS1)					Prepared: 04/04/18 11:30		Analyzed: 04/04/18 14:09					
EPA 300.0												
Sulfate	7.82	1.00	1.00	mg/L	1	8.00	---	98	90-110%	---	---	
Duplicate (8040459-DUP1)					Prepared: 04/04/18 11:30		Analyzed: 04/04/18 14:52					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 300.0												
Sulfate	**11.7**	1.00	1.00	mg/L	1	---	11.7	---	---	0.1	15%	
Matrix Spike (8040459-MS1)					Prepared: 04/04/18 11:30		Analyzed: 04/04/18 15:13					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 300.0												
Sulfate	21.7	1.25	1.25	mg/L	1	10.0	11.7	101	80-120%	---	---	
Matrix Spike Dup (8040459-MSD1)					Prepared: 04/04/18 11:30		Analyzed: 04/04/18 15:35					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 300.0												
Sulfate	21.6	1.25	1.25	mg/L	1	10.0	11.7	99	80-120%	2	15%	

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031377 - Method Prep: Aq								**Water**				
Blank (8031377-BLK1)					Prepared: 03/30/18 15:22		Analyzed: 03/30/18 23:09					
EPA 300.0-LL												
Fluoride	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
LCS (8031377-BS1)					Prepared: 03/30/18 15:22		Analyzed: 03/30/18 23:31					
EPA 300.0-LL												
Fluoride	1.42	0.100	0.100	mg/L	1	1.50	---	94	90-110%	---	---	
Duplicate (8031377-DUP1)					Prepared: 03/30/18 15:22		Analyzed: 03/31/18 00:14					
QC Source Sample: MW13-08P_20180319 (A8C0924-08)												
EPA 300.0-LL												
Fluoride	**5.27**	0.100	0.100	mg/L	1	---	5.32	---	---	0.9	15%	
Duplicate (8031377-DUP2)					Prepared: 03/30/18 15:22		Analyzed: 03/31/18 09:13					
QC Source Sample: MW13-11S_20180320 (A8C0924-20)												
EPA 300.0-LL												
Fluoride	**0.481**	0.100	0.100	mg/L	1	---	0.499	---	---	4	15%	
Matrix Spike (8031377-MS1)					Prepared: 03/30/18 15:22		Analyzed: 03/31/18 00:35					
QC Source Sample: MW13-08P_20180319 (A8C0924-08)												
EPA 300.0-LL												
Fluoride	6.81	0.104	0.104	mg/L	1	1.56	5.32	96	80-120%	---	---	
Matrix Spike (8031377-MS2)					Prepared: 03/30/18 15:22		Analyzed: 03/31/18 09:35					
QC Source Sample: MW13-11S_20180320 (A8C0924-20)												
EPA 300.0-LL												
Fluoride	1.98	0.104	0.104	mg/L	1	1.56	0.499	95	80-120%	---	---	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8040366 - Method Prep: Aq							**Water**					
Blank (8040366-BLK1)					Prepared: 04/02/18 11:27		Analyzed: 04/02/18 14:00					
EPA 300.0-LL												
Fluoride	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
LCS (8040366-BS1)					Prepared: 04/02/18 11:27		Analyzed: 04/02/18 14:22					
EPA 300.0-LL												
Fluoride	1.45	0.100	0.100	mg/L	1	1.50	---	96	90-110%	---	---	
Duplicate (8040366-DUP1)					Prepared: 04/02/18 11:27		Analyzed: 04/02/18 15:05					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 300.0-LL												
Fluoride	**0.485**	0.100	0.100	mg/L	1	---	0.487	---	---	0.4	15%	
Duplicate (8040366-DUP2)					Prepared: 04/02/18 11:27		Analyzed: 04/02/18 23:41					
QC Source Sample: MW13-08P_20180319 (A8C0924-08RE1)												
EPA 300.0-LL												
Fluoride	**5.24**	0.100	0.100	mg/L	1	---	5.18	---	---	1	15%	
Matrix Spike (8040366-MS1)					Prepared: 04/02/18 11:27		Analyzed: 04/02/18 15:26					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 300.0-LL												
Fluoride	1.97	0.104	0.104	mg/L	1	1.56	0.487	95	80-120%	---	---	
Matrix Spike (8040366-MS2)					Prepared: 04/02/18 11:27		Analyzed: 04/03/18 00:03					
QC Source Sample: MW13-08P_20180319 (A8C0924-08RE1)												
EPA 300.0-LL												
Fluoride	6.79	0.104	0.104	mg/L	1	1.56	5.18	103	80-120%	---	---	
Matrix Spike Dup (8040366-MSD1)					Prepared: 04/02/18 11:27		Analyzed: 04/02/18 15:48					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 300.0-LL												
Fluoride	1.98	0.104	0.104	mg/L	1	1.56	0.487	96	80-120%	0.8	15%	
Matrix Spike Dup (8040366-MSD2)					Prepared: 04/02/18 11:27		Analyzed: 04/03/18 00:24					
QC Source Sample: MW13-08P_20180319 (A8C0924-08RE1)												
EPA 300.0-LL												
Fluoride	6.77	0.104	0.104	mg/L	1	1.56	5.18	102	80-120%	1	15%	

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031210 - Method Prep: Aq									Water			
Blank (8031210-BLK1)					Prepared: 03/27/18 10:51		Analyzed: 03/27/18 13:01					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031210-BS1)					Prepared: 03/27/18 10:51		Analyzed: 03/27/18 13:03					
EPA 335.4												
Cyanide, Total	0.273	0.00500	0.00500	mg/L	1	0.250	---	109	85-115%	---	---	
Duplicate (8031210-DUP3)					Prepared: 03/27/18 10:51		Analyzed: 03/27/18 14:21					
QC Source Sample: MWR-15S_20180320 (A8C0924-24RE1)												
EPA 335.4												
Cyanide, Total	**3.99**	0.100	0.100	mg/L	20	---	4.41	---	---	10	10%	
Matrix Spike (8031210-MS3)					Prepared: 03/27/18 10:51		Analyzed: 03/27/18 14:23					
QC Source Sample: MWR-15S_20180320 (A8C0924-24RE1)												
EPA 335.4												
Cyanide, Total	3.68	0.100	0.100	mg/L	20	0.250	4.41	-290	80-120%	---	---	Q-03

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031320 - Method Prep: Aq							**Water**					
Blank (8031320-BLK1)					Prepared: 03/29/18 11:44		Analyzed: 03/29/18 13:59					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031320-BS1)					Prepared: 03/29/18 11:44		Analyzed: 03/29/18 14:01					
EPA 335.4												
Cyanide, Total	0.257	0.00500	0.00500	mg/L	1	0.250	---	103	85-115%	---	---	
Duplicate (8031320-DUP5)					Prepared: 03/29/18 11:44		Analyzed: 03/29/18 15:21					
QC Source Sample: MW13-08P_20180319 (A8C0924-08RE3)												
EPA 335.4												
Cyanide, Total	**1.15**	0.0500	0.0500	mg/L	10	---	1.08	---	---	6	10%	Q-16
Duplicate (8031320-DUP6)					Prepared: 03/29/18 11:44		Analyzed: 03/29/18 15:33					
QC Source Sample: MW-42S_20180319 (A8C0924-11RE1)												
EPA 335.4												
Cyanide, Total	**0.439**	0.00500	0.00500	mg/L	1	---	0.466	---	---	6	10%	Q-16
Matrix Spike (8031320-MS4)					Prepared: 03/29/18 11:44		Analyzed: 03/29/18 15:23					
QC Source Sample: MW13-08P_20180319 (A8C0924-08RE3)												
EPA 335.4												
Cyanide, Total	1.45	0.0500	0.0500	mg/L	10	0.250	1.08	150	80-120%	---	---	Q-03, Q-16
Matrix Spike (8031320-MS5)					Prepared: 03/29/18 11:44		Analyzed: 03/29/18 15:35					
QC Source Sample: MW-42S_20180319 (A8C0924-11RE1)												
EPA 335.4												
Cyanide, Total	0.657	0.0100	0.0100	mg/L	2	0.250	0.466	76	80-120%	---	---	Q-03, Q-16
Matrix Spike Dup (8031320-MSD4)					Prepared: 03/29/18 11:44		Analyzed: 03/29/18 15:25					
QC Source Sample: MW13-08P_20180319 (A8C0924-08RE3)												
EPA 335.4												
Cyanide, Total	1.45	0.0500	0.0500	mg/L	10	0.250	1.08	151	80-120%	0.3	10%	Q-03, Q-16

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Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031344 - Method Prep: Aq							**Water**					
Blank (8031344-BLK1)					Prepared: 03/30/18 08:03		Analyzed: 03/30/18 12:01					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031344-BS1)					Prepared: 03/30/18 08:03		Analyzed: 03/30/18 12:03					
EPA 335.4												
Cyanide, Total	0.254	0.00500	0.00500	mg/L	1	0.250	---	101	85-115%	---	---	
Duplicate (8031344-DUP1)					Prepared: 03/30/18 08:03		Analyzed: 03/30/18 12:31					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 335.4												
Cyanide, Total	**0.00830**	0.00500	0.00500	mg/L	1	---	0.00970	---	---	16	10%	Q-05
Matrix Spike (8031344-MS1)					Prepared: 03/30/18 08:03		Analyzed: 03/30/18 12:33					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 335.4												
Cyanide, Total	0.266	0.00500	0.00500	mg/L	1	0.250	0.00970	103	80-120%	---	---	
Matrix Spike Dup (8031344-MSD1)					Prepared: 03/30/18 08:03		Analyzed: 03/30/18 12:35					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
EPA 335.4												
Cyanide, Total	0.267	0.00500	0.00500	mg/L	1	0.250	0.00970	103	80-120%	0.4	10%	

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Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031345 - Method Prep: Aq									Water			
Blank (8031345-BLK1)					Prepared: 03/30/18 08:05		Analyzed: 03/30/18 12:55					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031345-BS1)					Prepared: 03/30/18 08:05		Analyzed: 03/30/18 12:57					
EPA 335.4												
Cyanide, Total	0.259	0.00500	0.00500	mg/L	1	0.250	---	104	85-115%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031203 - Method Prep: Aq							**Water**					
Blank (8031203-BLK1)					Prepared: 03/27/18 08:52		Analyzed: 03/27/18 12:07					
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031203-BS1)					Prepared: 03/27/18 08:52		Analyzed: 03/27/18 12:09					
SM 4500-CN I												
Cyanide, WAD	0.243	0.00500	0.00500	mg/L	1	0.250	---	97	85-115%	---	---	
Duplicate (8031203-DUP1)					Prepared: 03/27/18 08:52		Analyzed: 03/27/18 12:39					
QC Source Sample: MW13-08P_20180319 (A8C0924-08)												
SM 4500-CN I												
Cyanide, WAD	**0.0213**	0.00500	0.00500	mg/L	1	---	0.0212	---	---	0.5	10%	
Duplicate (8031203-DUP2)					Prepared: 03/27/18 08:52		Analyzed: 03/27/18 12:57					
QC Source Sample: MWR-15S_20180320 (A8C0924-24)												
SM 4500-CN I												
Cyanide, WAD	**0.145**	0.00500	0.00500	mg/L	1	---	0.157	---	---	8	10%	
Matrix Spike (8031203-MS1)					Prepared: 03/27/18 08:52		Analyzed: 03/27/18 12:41					
QC Source Sample: MW13-08P_20180319 (A8C0924-08)												
SM 4500-CN I												
Cyanide, WAD	0.282	0.00500	0.00500	mg/L	1	0.250	0.0212	104	80-120%	---	---	
Matrix Spike (8031203-MS2)					Prepared: 03/27/18 08:52		Analyzed: 03/27/18 12:59					
QC Source Sample: MWR-15S_20180320 (A8C0924-24)												
SM 4500-CN I												
Cyanide, WAD	0.346	0.00500	0.00500	mg/L	1	0.250	0.157	76	80-120%	---	---	Q-01
Matrix Spike Dup (8031203-MSD1)					Prepared: 03/27/18 08:52		Analyzed: 03/27/18 12:49					
QC Source Sample: MW13-08P_20180319 (A8C0924-08)												
SM 4500-CN I												
Cyanide, WAD	0.278	0.00500	0.00500	mg/L	1	0.250	0.0212	103	80-120%	1	10%	

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031259 - Method Prep: Aq							**Water**					
Blank (8031259-BLK1)					Prepared: 03/28/18 09:45		Analyzed: 03/28/18 14:41					
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031259-BS1)					Prepared: 03/28/18 09:45		Analyzed: 03/28/18 13:19					
SM 4500-CN I												
Cyanide, WAD	0.237	0.00500	0.00500	mg/L	1	0.250	---	95	85-115%	---	---	
Duplicate (8031259-DUP1)					Prepared: 03/28/18 09:45		Analyzed: 03/28/18 14:43					
QC Source Sample: Other (A8C0924-02RE1)												
SM 4500-CN I												
Cyanide, WAD	**0.0559**	0.00500	0.00500	mg/L	1	---	0.0629	---	---	12	10%	Q-01
Duplicate (8031259-DUP2)					Prepared: 03/28/18 09:45		Analyzed: 03/28/18 13:49					
QC Source Sample: MW-38S_20180320 (A8C0924-22)												
SM 4500-CN I												
Cyanide, WAD	**0.0124**	0.00500	0.00500	mg/L	1	---	0.0106	---	---	16	10%	Q-05
Matrix Spike (8031259-MS1)					Prepared: 03/28/18 09:45		Analyzed: 03/28/18 13:23					
QC Source Sample: Other (A8C0924-02RE1)												
SM 4500-CN I												
Cyanide, WAD	0.300	0.00500	0.00500	mg/L	1	0.250	0.0629	95	80-120%	---	---	
Matrix Spike (8031259-MS2)					Prepared: 03/28/18 09:45		Analyzed: 03/28/18 13:51					
QC Source Sample: MW-38S_20180320 (A8C0924-22)												
SM 4500-CN I												
Cyanide, WAD	0.252	0.00500	0.00500	mg/L	1	0.250	0.0106	97	80-120%	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031260 - Method Prep: Aq							**Water**					
Blank (8031260-BLK2)					Prepared: 03/28/18 09:47		Analyzed: 03/28/18 15:07					
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8031260-BS1)					Prepared: 03/28/18 09:47		Analyzed: 03/28/18 13:55					
SM 4500-CN I												
Cyanide, WAD	0.232	0.00500	0.00500	mg/L	1	0.250	---	93	85-115%	---	---	
Duplicate (8031260-DUP1)					Prepared: 03/28/18 09:47		Analyzed: 03/28/18 14:21					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
SM 4500-CN I												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Duplicate (8031260-DUP2)					Prepared: 03/28/18 09:47		Analyzed: 03/28/18 14:37					
QC Source Sample: MW-12A_20180321 (A8C0924-37)												
SM 4500-CN I												
Cyanide, WAD	**0.00860**	0.00500	0.00500	mg/L	1	---	0.00900	---	---	5	10%	
Matrix Spike (8031260-MS1)					Prepared: 03/28/18 09:47		Analyzed: 03/28/18 14:23					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
SM 4500-CN I												
Cyanide, WAD	0.251	0.00500	0.00500	mg/L	1	0.250	ND	101	80-120%	---	---	
Matrix Spike (8031260-MS2)					Prepared: 03/28/18 09:47		Analyzed: 03/28/18 14:39					
QC Source Sample: MW-12A_20180321 (A8C0924-37)												
SM 4500-CN I												
Cyanide, WAD	0.267	0.00500	0.00500	mg/L	1	0.250	0.00900	103	80-120%	---	---	
Matrix Spike Dup (8031260-MSD1)					Prepared: 03/28/18 09:47		Analyzed: 03/28/18 14:25					
QC Source Sample: MWR-13A_20180321 (A8C0924-34)												
SM 4500-CN I												
Cyanide, WAD	0.243	0.00500	0.00500	mg/L	1	0.250	ND	97	80-120%	3	10%	

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SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8040397							
A8C0924-01	Water	EPA 300.0	03/19/18 00:00	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-02RE1	Water	EPA 300.0	03/20/18 00:00	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-03	Water	EPA 300.0	03/20/18 00:00	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-04	Water	EPA 300.0	03/19/18 12:30	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-05	Water	EPA 300.0	03/19/18 13:05	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-06	Water	EPA 300.0	03/19/18 14:25	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-07	Water	EPA 300.0	03/19/18 16:40	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-08	Water	EPA 300.0	03/19/18 15:15	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-09	Water	EPA 300.0	03/19/18 15:55	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-10	Water	EPA 300.0	03/20/18 08:30	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-11	Water	EPA 300.0	03/19/18 13:40	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-12	Water	EPA 300.0	03/20/18 09:10	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-13	Water	EPA 300.0	03/21/18 00:00	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-14	Water	EPA 300.0	03/20/18 14:00	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-15	Water	EPA 300.0	03/20/18 14:35	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-16	Water	EPA 300.0	03/21/18 08:30	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-17	Water	EPA 300.0	03/20/18 09:50	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-18	Water	EPA 300.0	03/20/18 10:30	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-19	Water	EPA 300.0	03/20/18 13:00	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
A8C0924-20	Water	EPA 300.0	03/20/18 12:15	04/03/18 07:09	5mL/5mL	5mL/5mL	1.00
Batch: 8040405							
A8C0924-21	Water	EPA 300.0	03/20/18 17:05	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-22	Water	EPA 300.0	03/20/18 15:20	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-23	Water	EPA 300.0	03/20/18 16:05	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-24	Water	EPA 300.0	03/20/18 11:15	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-25	Water	EPA 300.0	03/21/18 08:35	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-26	Water	EPA 300.0	03/21/18 12:35	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-27	Water	EPA 300.0	03/21/18 11:30	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-28	Water	EPA 300.0	03/21/18 17:00	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-29	Water	EPA 300.0	03/21/18 14:45	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
A8C0924-30	Water	EPA 300.0	03/21/18 10:45	04/03/18 09:01	5mL/5mL	5mL/5mL	1.00
Batch: 8040459							
A8C0924-31	Water	EPA 300.0	03/21/18 17:40	04/04/18 11:30	5mL/5mL	5mL/5mL	1.00

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Philip Nerenberg, Lab Director

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8C0924-32	Water	EPA 300.0	03/21/18 15:30	04/04/18 11:30	5mL/5mL	5mL/5mL	1.00
A8C0924-33	Water	EPA 300.0	03/21/18 13:20	04/04/18 11:30	5mL/5mL	5mL/5mL	1.00
A8C0924-34	Water	EPA 300.0	03/21/18 16:10	04/04/18 11:30	5mL/5mL	5mL/5mL	1.00
A8C0924-35	Water	EPA 300.0	03/21/18 12:30	04/04/18 11:30	5mL/5mL	5mL/5mL	1.00
A8C0924-36	Water	EPA 300.0	03/21/18 14:00	04/04/18 11:30	5mL/5mL	5mL/5mL	1.00
A8C0924-37	Water	EPA 300.0	03/21/18 18:20	04/04/18 11:30	5mL/5mL	5mL/5mL	1.00

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031377							
A8C0924-01	Water	EPA 300.0-LL	03/19/18 00:00	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-02	Water	EPA 300.0-LL	03/20/18 00:00	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-03	Water	EPA 300.0-LL	03/20/18 00:00	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-04	Water	EPA 300.0-LL	03/19/18 12:30	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-05	Water	EPA 300.0-LL	03/19/18 13:05	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-06	Water	EPA 300.0-LL	03/19/18 14:25	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-09	Water	EPA 300.0-LL	03/19/18 15:55	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-10	Water	EPA 300.0-LL	03/20/18 08:30	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-11	Water	EPA 300.0-LL	03/19/18 13:40	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-12	Water	EPA 300.0-LL	03/20/18 09:10	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-13	Water	EPA 300.0-LL	03/21/18 00:00	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-14	Water	EPA 300.0-LL	03/20/18 14:00	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-15	Water	EPA 300.0-LL	03/20/18 14:35	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-16	Water	EPA 300.0-LL	03/21/18 08:30	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-17	Water	EPA 300.0-LL	03/20/18 09:50	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-18	Water	EPA 300.0-LL	03/20/18 10:30	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-19	Water	EPA 300.0-LL	03/20/18 13:00	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-20	Water	EPA 300.0-LL	03/20/18 12:15	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
Batch: 8040366							
A8C0924-07RE1	Water	EPA 300.0-LL	03/19/18 16:40	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-08RE1	Water	EPA 300.0-LL	03/19/18 15:15	03/30/18 15:22	10mL/10mL	5mL/5mL	1.00
A8C0924-21	Water	EPA 300.0-LL	03/20/18 17:05	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-22	Water	EPA 300.0-LL	03/20/18 15:20	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8C0924-23	Water	EPA 300.0-LL	03/20/18 16:05	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-24	Water	EPA 300.0-LL	03/20/18 11:15	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-25	Water	EPA 300.0-LL	03/21/18 08:35	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-26	Water	EPA 300.0-LL	03/21/18 12:35	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-27	Water	EPA 300.0-LL	03/21/18 11:30	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-28	Water	EPA 300.0-LL	03/21/18 17:00	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-29	Water	EPA 300.0-LL	03/21/18 14:45	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-30	Water	EPA 300.0-LL	03/21/18 10:45	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-31	Water	EPA 300.0-LL	03/21/18 17:40	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-32	Water	EPA 300.0-LL	03/21/18 15:30	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-33	Water	EPA 300.0-LL	03/21/18 13:20	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-34	Water	EPA 300.0-LL	03/21/18 16:10	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-35	Water	EPA 300.0-LL	03/21/18 12:30	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-36	Water	EPA 300.0-LL	03/21/18 14:00	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00
A8C0924-37	Water	EPA 300.0-LL	03/21/18 18:20	04/02/18 11:27	10mL/10mL	5mL/5mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031210							
A8C0924-01RE1	Water	EPA 335.4	03/19/18 00:00	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-04RE1	Water	EPA 335.4	03/19/18 12:30	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-05RE1	Water	EPA 335.4	03/19/18 13:05	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-14	Water	EPA 335.4	03/20/18 14:00	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-15	Water	EPA 335.4	03/20/18 14:35	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-17RE1	Water	EPA 335.4	03/20/18 09:50	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-18RE1	Water	EPA 335.4	03/20/18 10:30	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-19RE1	Water	EPA 335.4	03/20/18 13:00	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-20	Water	EPA 335.4	03/20/18 12:15	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
A8C0924-24RE1	Water	EPA 335.4	03/20/18 11:15	03/27/18 10:51	6mL/6mL	6mL/6mL	1.00
Batch: 8031320							
A8C0924-02RE2	Water	EPA 335.4	03/20/18 00:00	03/29/18 11:44	6mL/6mL	6mL/6mL	1.00
A8C0924-03	Water	EPA 335.4	03/20/18 00:00	03/29/18 11:44	6mL/6mL	6mL/6mL	1.00
A8C0924-06RE3	Water	EPA 335.4	03/19/18 14:25	03/29/18 11:44	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8C0924-07RE2	Water	EPA 335.4	03/19/18 16:40	03/29/18 11:44	6mL/6mL	6mL/6mL	1.00
A8C0924-08RE3	Water	EPA 335.4	03/19/18 15:15	03/29/18 11:44	6mL/6mL	6mL/6mL	1.00
A8C0924-09RE2	Water	EPA 335.4	03/19/18 15:55	03/29/18 11:44	6mL/6mL	6mL/6mL	1.00
A8C0924-10RE1	Water	EPA 335.4	03/20/18 08:30	03/29/18 11:44	6mL/6mL	6mL/6mL	1.00
A8C0924-11RE1	Water	EPA 335.4	03/19/18 13:40	03/29/18 11:44	6mL/6mL	6mL/6mL	1.00
Batch: 8031344							
A8C0924-12RE1	Water	EPA 335.4	03/20/18 09:10	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-13	Water	EPA 335.4	03/21/18 00:00	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-16RE1	Water	EPA 335.4	03/21/18 08:30	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-21RE2	Water	EPA 335.4	03/20/18 17:05	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-22RE1	Water	EPA 335.4	03/20/18 15:20	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-23RE2	Water	EPA 335.4	03/20/18 16:05	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-25RE1	Water	EPA 335.4	03/21/18 08:35	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-32	Water	EPA 335.4	03/21/18 15:30	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-33	Water	EPA 335.4	03/21/18 13:20	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-34	Water	EPA 335.4	03/21/18 16:10	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-35	Water	EPA 335.4	03/21/18 12:30	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-36	Water	EPA 335.4	03/21/18 14:00	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
A8C0924-37	Water	EPA 335.4	03/21/18 18:20	03/30/18 08:03	6mL/6mL	6mL/6mL	1.00
Batch: 8031345							
A8C0924-26	Water	EPA 335.4	03/21/18 12:35	03/30/18 08:05	6mL/6mL	6mL/6mL	1.00
A8C0924-27	Water	EPA 335.4	03/21/18 11:30	03/30/18 08:05	6mL/6mL	6mL/6mL	1.00
A8C0924-28	Water	EPA 335.4	03/21/18 17:00	03/30/18 08:05	6mL/6mL	6mL/6mL	1.00
A8C0924-29	Water	EPA 335.4	03/21/18 14:45	03/30/18 08:05	6mL/6mL	6mL/6mL	1.00
A8C0924-30	Water	EPA 335.4	03/21/18 10:45	03/30/18 08:05	6mL/6mL	6mL/6mL	1.00
A8C0924-31	Water	EPA 335.4	03/21/18 17:40	03/30/18 08:05	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031203							
A8C0924-01RE1	Water	SM 4500-CN I	03/19/18 00:00	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00
A8C0924-04RE1	Water	SM 4500-CN I	03/19/18 12:30	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00
A8C0924-05	Water	SM 4500-CN I	03/19/18 13:05	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

SAMPLE PREPARATION INFORMATION

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8C0924-06	Water	SM 4500-CN I	03/19/18 14:25	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00
A8C0924-07	Water	SM 4500-CN I	03/19/18 16:40	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00
A8C0924-08	Water	SM 4500-CN I	03/19/18 15:15	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00
A8C0924-09	Water	SM 4500-CN I	03/19/18 15:55	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00
A8C0924-11	Water	SM 4500-CN I	03/19/18 13:40	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00
A8C0924-24	Water	SM 4500-CN I	03/20/18 11:15	03/27/18 08:52	6mL/6mL	6mL/6mL	1.00
Batch: 8031259							
A8C0924-02RE1	Water	SM 4500-CN I	03/20/18 00:00	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-03	Water	SM 4500-CN I	03/20/18 00:00	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-10	Water	SM 4500-CN I	03/20/18 08:30	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-12	Water	SM 4500-CN I	03/20/18 09:10	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-13	Water	SM 4500-CN I	03/21/18 00:00	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-14	Water	SM 4500-CN I	03/20/18 14:00	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-15	Water	SM 4500-CN I	03/20/18 14:35	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-16	Water	SM 4500-CN I	03/21/18 08:30	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-17	Water	SM 4500-CN I	03/20/18 09:50	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-18	Water	SM 4500-CN I	03/20/18 10:30	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-19	Water	SM 4500-CN I	03/20/18 13:00	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-20	Water	SM 4500-CN I	03/20/18 12:15	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-21	Water	SM 4500-CN I	03/20/18 17:05	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
A8C0924-22	Water	SM 4500-CN I	03/20/18 15:20	03/28/18 09:45	6mL/6mL	6mL/6mL	1.00
Batch: 8031260							
A8C0924-23	Water	SM 4500-CN I	03/20/18 16:05	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-25	Water	SM 4500-CN I	03/21/18 08:35	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-26	Water	SM 4500-CN I	03/21/18 12:35	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-27	Water	SM 4500-CN I	03/21/18 11:30	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-28	Water	SM 4500-CN I	03/21/18 17:00	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-29	Water	SM 4500-CN I	03/21/18 14:45	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-30	Water	SM 4500-CN I	03/21/18 10:45	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-31	Water	SM 4500-CN I	03/21/18 17:40	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-32	Water	SM 4500-CN I	03/21/18 15:30	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-33	Water	SM 4500-CN I	03/21/18 13:20	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-34	Water	SM 4500-CN I	03/21/18 16:10	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-35	Water	SM 4500-CN I	03/21/18 12:30	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

SAMPLE PREPARATION INFORMATION

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8C0924-36	Water	SM 4500-CN I	03/21/18 14:00	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00
A8C0924-37	Water	SM 4500-CN I	03/21/18 18:20	03/28/18 09:47	6mL/6mL	6mL/6mL	1.00

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7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

Notes and Definitions

Qualifiers:

Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-16	Reanalysis of an original Batch QC sample.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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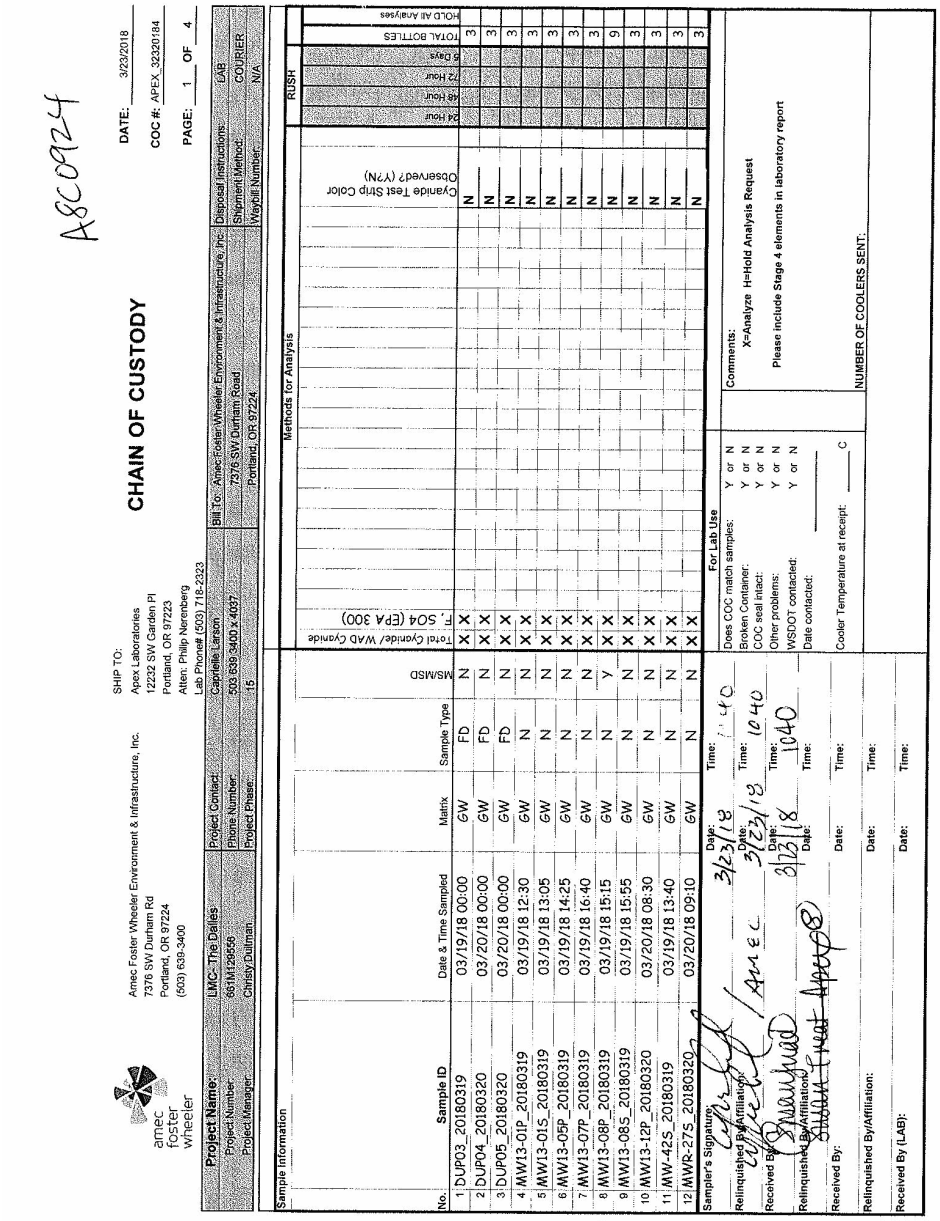

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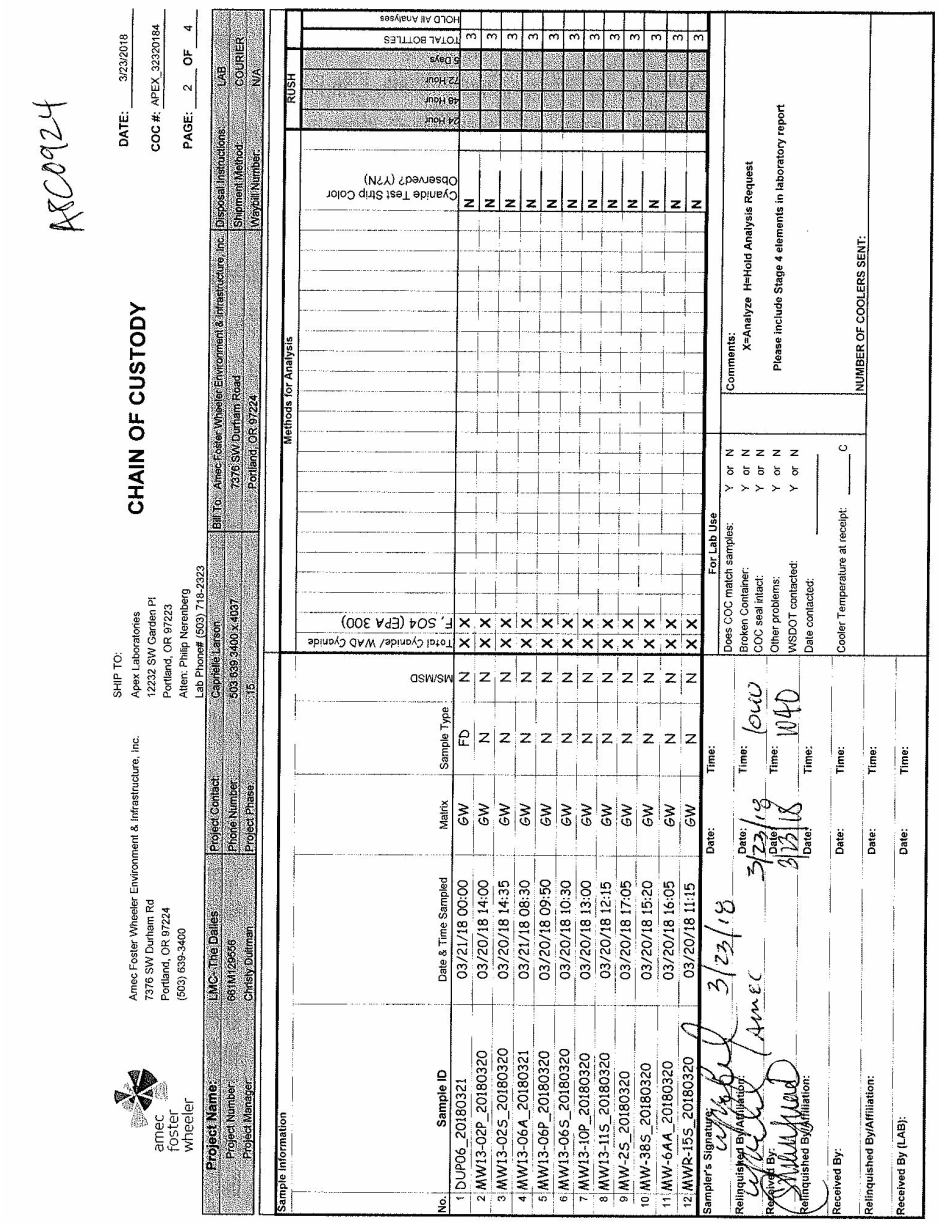
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21



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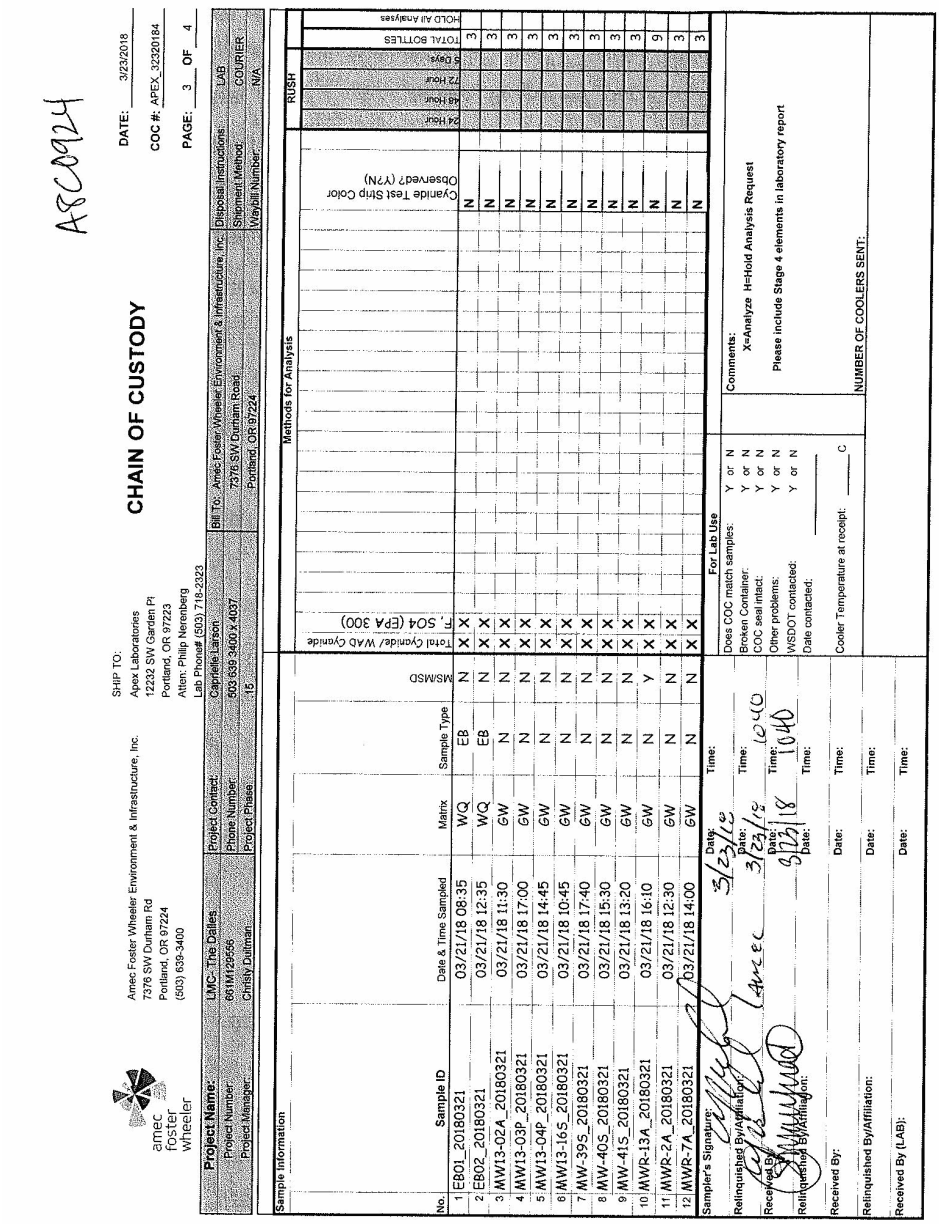

CHAIN OF CUSTODY

DATE: 3/23/2018

COC #: APEX_32320184

PAGE: 3 OF 4

SHIP TO:
Apex Laboratories
12232 SW Garden Pl
Portland, OR 97223
Attn: Philip Nerenberg
Lab Phone# (503) 718-2323

amec foster wheeler
Amec Foster Wheeler Environment & Infrastructure, Inc.
7376 SW Durham Rd
Portland, OR 97224
(503) 639-3400

Project Name: LMC The Dalles
Project Number: 661M129556
Project Manager: Christy Duitman
Project Contact: Capriele Larson
Phone Number: 503 639 3400 x 4037
Project Phase: 15

Bill To: Amec Foster Wheeler Environment & Infrastructure, Inc.
7376 SW Durham Road
Portland, OR 97224

Disposal Instructions: LAB
Shipment Method: COURIER
Waybill Number: N/A

RUSH: 24 Hour | 48 Hour | 72 Hour | 5 Days | TOTAL BOTTLES | HOLD All Analyses

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Total Cyanide/ WAD Cyanide (EPA 335.4)	F, SO4 (EPA 300)	Cyanide Test Strip Color Observed? (Y/N)	TOTAL BOTTLES
1	EB01_20180321	03/21/18 08:35	WQ	EB	N	X X		N	3
2	EB02_20180321	03/21/18 12:35	WQ	EB	N	X X		N	3
3	MW13-02A_20180321	03/21/18 11:30	GW	N	N	X X		N	3
4	MW13-03P_20180321	03/21/18 17:00	GW	N	N	X X		N	3
5	MW13-04P_20180321	03/21/18 14:45	GW	N	N	X X		N	3
6	MW13-16S_20180321	03/21/18 10:45	GW	N	N	X X		N	3
7	MW-39S_20180321	03/21/18 17:40	GW	N	N	X X		N	3
8	MW-40S_20180321	03/21/18 15:30	GW	N	N	X X		N	3
9	MW-41S_20180321	03/21/18 13:20	GW	N	N	X X		N	3
10	MWR-13A_20180321	03/21/18 16:10	GW	N	Y	X X		N	3
11	MWR-2A_20180321	03/21/18 12:30	GW	N	N	X X		N	9
12	MWR-7A_20180321	03/21/18 14:00	GW	N	N	X X		N	3

Methods for Analysis

Sampler's Signature: Date: 3/23/18 Time:

Relinquished By/Affiliation: Date: 3/23/18 Time: 1040

Received By: Date: Time:

Relinquished By/Affiliation: Date: Time:

Received By: Date: Time:

Relinquished By/Affiliation: Date: Time:

Received By (LAB): Date: Time:

For Lab Use

Does COC match samples: Y or N
Broken Container: Y or N
COC seal intact: Y or N
Other problems: Y or N
WSDOT contacted: Y or N
Date contacted:

Cooler Temperature at receipt: ____ C

Comments:
X=Analyze H=Hold Analysis Request
Please include Stage 4 elements in laboratory report

NUMBER OF COOLERS SENT:

A8C0924

Apex Laboratories

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Philip Nerenberg, Lab Director

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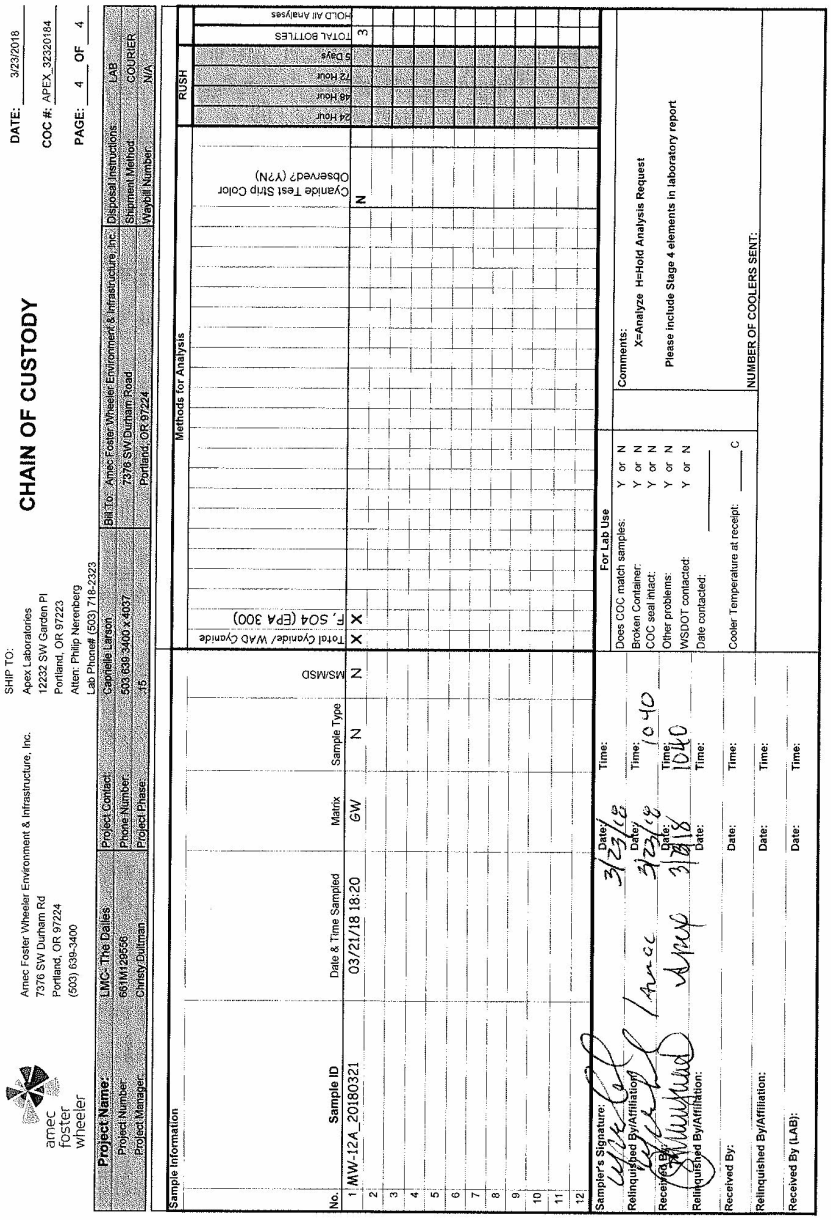
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21



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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.15	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/06/18 17:21

APEX LABS COOLER RECEIPT FORM

Client: Amec / Wood Element WO#: ABC0924

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 3/23/18 @ 1040 By: [illegible]

Delivered by: Apex___ Client ✓ ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: [illegible] : 3/23/18 @ 1040

Chain of Custody Included? Yes ✓ No___ Custody Seals? Yes___ No ✓

Signed/Dated by Client? Yes ✓ No___

Signed/Dated by Apex? Yes ✓ No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	—	—					
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	1.4	1.1					
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: [illegible] : 3/23/18 @ 1257

All Samples Intact? Yes ✓ No___ Comments:

Bottle Labels/COCs agree? Yes ✓ No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA ✓

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No___ NA___

Comments:

Additional Information:

Labeled by: [illegible] Witness: [illegible] Cooler Inspected by: [illegible] See Project Contact Form: Y

Apex Laboratories

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Philip Nerenberg, Lab Director

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APPENDIX E

Data Validation Reports

DATA VALIDATION CHECKLIST

Project Information			
Project Name:	Lockheed Martin	Lab Name:	Apex Labs
Project Number:	661M129556.0016	Lab Report Number:	A8C0658
Reviewer's Signature:	Nathalie Perry-Freer, Wood	Number of Samples:	4
Review Date:	April 3, 2018	Matrix:	Groundwater

Field Sample Identification	Collection Date	Laboratory Sample Identification
LS-1_20180316	3/16/2018	A8C0658-01
LS-2_20180316	3/16/2018	A8C0658-02
MH-2_20180316	3/16/2018	A8C0658-03
MH-4_20180316	3/16/2018	A8C0658-04

DEFINITIONS OF QUALIFIERS THAT MAY BE ADDED DURING DATA QUALITY REVIEW

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Assessment Summary - General Chemistry

Using the codes O, M, R, and X described below, complete the table for a single quality control batch or sample delivery group. Identify comments by means of a footnote, e.g. X(2), and describe in the space provided.

Method/Analyte:	Sulfate	Fluoride	Total Cyanide	WAD Cyanide
Method Number:	EPA 300.0	EPA 300.0	EPA 335.4	SM 4500-CN-E EPA 335.4M
Preservation:	≤ 6℃	≤ 6℃	pH ≥ 12, ≤ 6℃	pH ≥ 12, ≤ 6℃
Maximum Hold Time:	28 days	28 days	14 days	14 days
Reporting Limits (mg/L):	1	0.1	0.005	0.005
1. Preservation/hold times	O	O	O	O
2. Reporting Limits	**X[1]**	O	**X[2]**	O
3. Initial Calibration ($r \geq 0.995$, $r^2 \geq 0.99$, RSD ≥ 15%)	O	O	NA	NA
4. Initial Calibration Verification (90% - 110%)	O	O	O	O
5. Continuing Calibration Verification (90%-110%)	O	O	O	O
6. Field Blanks (no detections > reporting limits)	NA	NA	NA	NA
7. Laboratory and Calibration Blanks (no detections > reporting limits)	O	O	O	O
8. Laboratory Control Sample accuracy (75% - 125%)	O	O	O	O
9. Laboratory Control Sample Precision (≤ 25%)	NA	NA	NA	NA
10. Laboratory Duplicate Precision (≤ 25%)	NA	NA	NA	NA
11. Matrix Spike Accuracy (75% - 125%)	NA	NA	NA	NA
12. Matrix Spike Precision (≤ 25%)	NA	NA	NA	NA
13. Field Duplicate Precision (≤ 40%)	NA	NA	NA	NA

Assessment Codes:

O = No quality controls (QC) problems were identified for these criteria.

M = The results are qualified due to QC problems. The quantitative results will be qualified with a QC flag indicating that the results are estimated due to error greater than specified in the method.

R = The results are unacceptable due to gross QC problems. The results will be qualified as rejected (R).

X = QC problems were identified, but they do not affect the results, or the reviewer is not certain of the effect on the results.

NA = Supporting documentation or data is not present in the laboratory data package.

-- = Parameter is not appropriate for this analysis.

Assessment Code	Description	Action Required
X[1]	Sulfate reporting limits were elevated for samples LS-1, LS-2, MH-2, and MH-4.	Reporting limits for sulfate were elevated to concentrations of 10.0 milligrams per liter (mg/L) in the affected samples due to sample dilution. Sulfate was detected in all of the affected samples and data usability is not adversely affected by the elevated limits.
X[2]	Total cyanide reporting limits were elevated for samples LS-1, LS-2, MH-2, and MH-4.	Reporting limits for total cyanide were elevated to concentrations between 0.0100 mg/L and 0.0500 mg/L in the affected samples due to sample dilution. Total cyanide was detected in all of the affected samples and data usability is not adversely affected by the elevated limits.

DATA VALIDATION CHECKLIST

Project Information			
Project Name:	Lockheed Martin	Lab Name:	Apex Labs
Project Number:	661M129556.0016	Lab Report Number:	A8C0659
Reviewer's Signature:	Nathalie Perry-Freer, Wood	Number of Samples:	21
Review Date:	April 3, 2018	Matrix:	Groundwater

Field Sample Identification	Collection Date	Laboratory Sample Identification
DUP01_20180315	3/15/2018	A8C0659-01
DUP02_20180315	3/15/2018	A8C0659-02
MW13-13S_20180315	3/15/2018	A8C0659-03
MW15-18P_20180315	3/15/2018	A8C0659-04
MW15-19SL_20180314	3/14/2018	A8C0659-05
MW15-20P_20180315	3/15/2018	A8C0659-06
MW-26S_20180314	3/14/2018	A8C0659-07
MW-37S_20180315	3/15/2018	A8C0659-08
MW-3S_20180315	3/15/2018	A8C0659-09
MW-5_20180314	3/14/2018	A8C0659-10
MWR-29S_20180314	3/14/2018	A8C0659-11
MWR-4S_20180314	3/14/2018	A8C0659-12
MW13-14SL_20180315	3/15/2018	A8C0659-13
MW13-15SL_20180315	3/15/2018	A8C0659-14
MW-17S_20180315	3/15/2018	A8C0659-15
MW-22S_20180315	3/15/2018	A8C0659-16
MW-23S_20180315	3/15/2018	A8C0659-17
MW-35S_20180315	3/15/2018	A8C0659-18
MW-36S_20180315	3/15/2018	A8C0659-19
MW-5S_20180315	3/15/2018	A8C0659-20
MW15-17SL_20180315	3/15/2018	A8C0659-21

DEFINITIONS OF QUALIFIERS THAT MAY BE ADDED DURING DATA QUALITY REVIEW

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Assessment Summary - General Chemistry

Using the codes O, M, R, and X described below, complete the table for a single quality control batch or sample delivery group. Identify comments by means of a footnote, e.g. X(2), and describe in the space provided.

Method/Analyte:	Sulfate	Fluoride	Total Cyanide	WAD Cyanide
Method Number:	EPA 300.0	EPA 300.0	EPA 335.4	SM 4500-CN-E EPA 335.4M
Preservation:	≤ 6℃	≤ 6℃	pH ≥ 12, ≤ 6℃	pH ≥ 12, ≤ 6℃
Maximum Hold Time:	28 days	28 days	14 days	14 days
Reporting Limits (mg/L):	1	0.1	0.005	0.005
1. Preservation/hold times	O	O	O	O
2. Reporting Limits	**X[1]**	O	O	O
3. Initial Calibration ($r \geq 0.995$, $r^2 \geq 0.99$, RSD ≥ 15%)	O	O	N/A	N/A
4. Initial Calibration Verification (90% - 110%)	O	O	O	O
5. Continuing Calibration Verification (90%-110%)	O	O	O	O
6. Field Blanks (no detections > reporting limits)	NA	NA	NA	NA
7. Laboratory and Calibration Blanks (no detections > reporting limits)	O	O	O	O
8. Laboratory Control Sample accuracy (75% - 125%)	O	O	O	O
9. Laboratory Control Sample Precision (≤ 25%)	NA	NA	NA	NA
10. Laboratory Duplicate Precision (≤ 25%)	O	O	O	O
11. Matrix Spike Accuracy (75% - 125%)	O	**M[1]**	O	O
12. Matrix Spike Precision (≤ 25%)	O	O	O	O
13. Field Duplicate Precision (≤ 40%)	**M[2]**	O	O	O

Assessment Codes:

O = No quality controls (QC) problems were identified for these criteria.

M = The results are qualified due to QC problems. The quantitative results will be qualified with a QC flag indicating that the results are estimated due to error greater than specified in the method.

R = The results are unacceptable due to gross QC problems. The results will be qualified as rejected (R).

X = QC problems were identified, but they do not affect the results, or the reviewer is not certain of the effect on the results.

NA = Supporting documentation or data is not present in the laboratory data package.

-- = Parameter is not appropriate for this analysis.

Assessment Code	Description	Action Required
M[1]	Fluoride recovery was low at 64% in the matrix spike performed on sample DUP01.	Amec Foster Wheeler J qualified the detected fluoride result from DUP01 and its parent sample, MW-5S, due to potential low analytical bias. (J-LM)
M[2]	The relative percent difference (RPD) between sulfate detections in primary sample MW-5S and field duplicate DUP01 was high at 90%.	Amec Foster Wheeler J qualified the detected sulfate recoveries from the sample and field duplicate due to potential sampling and/or analytical imprecision. (J-FD)
X[1]	Sulfate reporting limits were elevated for samples DUP01, DUP02, MW15-19SL, MW-5, MWR-29S, MWR-4S, MW13-14SL, MW13-15SL, MW-22S, MW-35S, MW-36S, MW-5S, and MW15-17SL.	Reporting limits for sulfate were elevated to concentrations between 2.0 milligrams per liter (mg/L) and 100 mg/L in the affected samples due to sample dilution. Sulfate was detected in all of the affected samples and data usability is not adversely affected by the elevated limits.

Field Duplicate Detections

Analyte	Average Reporting Limit		Primary Concentration	Field Duplicate Concentration		RPD	Notes
Samples MW-5S and DUP01							
Sulfate	2.0	mg/L	20.6	54.4		90.1%	J-FD
Fluoride	0.1	mg/L	7.55	7.92	J	4.8%	
Total Cyanide	0.005	mg/L	0.224	0.202		10.3%	
WAD Cyanide	0.005	mg/L	0.126	0.0139		9.8%	
Samples MW15-17SL and DUP02							
Sulfate	10.0	mg/L	164	168		2.4%	
Fluoride	0.1	mg/L	0.826	0.792		4.2%	
Total Cyanide	0.005	mg/L	0.216	0.195		10.2%	
WAD Cyanide	0.005	mg/L	0.0108	0.0101		6.7%	

Notes:
FD = High field duplicate RPD
mg/L = milligrams per liter
RPD = relative percent difference
WAD = weak acid dissociable

Qualifiers Added During Data Assessment				
Sample IDs	**Analytical Method**	**Analytes**	**Concentrations**	**Qualifiers and Reason Codes**
DUP01	Anions by EPA 300.0/9056A	Fluoride	7.92 mg/L	J-LM
DUP01	Anions by EPA 300.0/9056A	Sulfate	54.4 mg/L	J-FD
MW-5S	Anions by EPA 300.0/9056A	Fluoride	7.55 mg/L	J-LM
MW-5S	Anions by EPA 300.0/9056A	Sulfate	20.6 mg/L	J-FD

Reason Codes:
FD = High field duplicate RPD
LM = Low MS and/or MSD recovery

DATA VALIDATION CHECKLIST

Project Information			
Project Name:	Lockheed Martin	Lab Name:	Apex Labs
Project Number:	661M129556.0016	Lab Report Number:	A8C0924
Reviewer's Signature:	Nathalie Perry-Freer, Wood	Number of Samples:	37
Review Date:	April 17, 2018	Matrix:	Groundwater

Field Sample Identification	Collection Date	Laboratory Sample Identification
DUP03_20180319	3/19/2018	A8C0924-01
DUP04_20180320	3/20/2018	A8C0924-02
DUP05_20180320	3/20/2018	A8C0924-03
MW13-01P_20180319	3/19/2018	A8C0924-04
MW13-01S_20180319	3/19/2018	A8C0924-05
MW13-05P_20180319	3/19/2018	A8C0924-06
MW13-07P_20180319	3/19/2018	A8C0924-07
MW13-08P_20180319	3/19/2018	A8C0924-08
MW13-08S_20180319	3/19/2018	A8C0924-09
MW13-12P_20180320	3/20/2018	A8C0924-10
MW-42S_20180319	3/19/2018	A8C0924-11
MWR-27S_20180320	3/20/2018	A8C0924-12
DUP06_20180321	3/21/2018	A8C0924-13
MW13-02P_20180320	3/20/2018	A8C0924-14
MW13-02S_20180320	3/20/2018	A8C0924-15
MW13-06A_20180321	3/21/2018	A8C0924-16
MW13-06P_20180320	3/20/2018	A8C0924-17
MW13-06S_20180320	3/20/2018	A8C0924-18
MW13-10P_20180320	3/20/2018	A8C0924-19
MW13-11S_20180320	3/20/2018	A8C0924-20
MW-2S_20180320	3/20/2018	A8C0924-21
MW-38S_20180320	3/20/2018	A8C0924-22
MW-6AA_20180320	3/20/2018	A8C0924-23
MWR-15S_20180320	3/20/2018	A8C0924-24
MW13-02A_20180321	3/21/2018	A8C0924-27
MW13-03P_20180321	3/21/2018	A8C0924-28
MW13-04P_20180321	3/21/2018	A8C0924-29
MW13-16S_20180321	3/21/2018	A8C0924-30
MW-39S_20180321	3/21/2018	A8C0924-31
MW-40S_20180321	3/21/2018	A8C0924-32
MW-41S_20180321	3/21/2018	A8C0924-33
MWR-13A_20180321	3/21/2018	A8C0924-34
MWR-2A_20180321	3/21/2018	A8C0924-35
MWR-7A_20180321	3/21/2018	A8C0924-36
MW-12A_20180321	3/21/2018	A8C0924-37

DEFINITIONS OF QUALIFIERS THAT MAY BE ADDED DURING DATA QUALITY REVIEW

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Assessment Summary - General Chemistry

Using the codes O, M, R, and X described below, complete the table for a single quality control batch or sample delivery group. Identify comments by means of a footnote, e.g. X(2), and describe in the space provided.

Method/Analyte:	Sulfate	Fluoride	Total Cyanide	WAD Cyanide
Method Number:	EPA 300.0	EPA 300.0	EPA 335.4	SM 4500-CN-E EPA 335.4M
Preservation:	≤ 6°C	≤ 6°C	pH ≥ 12, ≤ 6°C	pH ≥ 12, ≤ 6°C
Maximum Hold Time:	28 days	28 days	14 days	14 days
Reporting Limits (mg/L):	1	0.1	0.005	0.005
1. Preservation/hold times	O	O	O	O
2. Reporting Limits	**X[1]**	**X[2]**	**X[3]**	**X[4]**
3. Initial Calibration ($r \geq 0.995$, $r^2 \geq 0.99$, RSD ≥ 15%)	O	O	NA	NA
4. Initial Calibration Verification (90% - 110%)	O	O	O	O
5. Continuing Calibration Verification (90%-110%)	O	O	O	O
6. Field Blanks (no detections > reporting limits)	O	O	O	O
7. Laboratory and Calibration Blanks (no detections > reporting limits)	O	O	O	O
8. Laboratory Control Sample accuracy (75% - 125%)	O	O	O	O
9. Laboratory Control Sample Precision (≤ 25%)	NA	NA	NA	NA
10. Laboratory Duplicate Precision (≤ 25%)	O	O	O	O
11. Matrix Spike Accuracy (75% - 125%)	O	O	**X[5]**	O
12. Matrix Spike Precision (≤ 25%)	O	O	O	O
13. Field Duplicate Precision (≤ 40%)	O	O	O	**M[1]**

Assessment Codes:

O = No quality controls (QC) problems were identified for these criteria.

M = The results are qualified due to QC problems. The quantitative results will be qualified with a QC flag indicating that the results are estimated due to error greater than specified in the method.

R = The results are unacceptable due to gross QC problems. The results will be qualified as rejected (R).

X = QC problems were identified, but they do not affect the results, or the reviewer is not certain of the effect on the results.

NA = Supporting documentation or data is not present in the laboratory data package.

-- = Parameter is not appropriate for this analysis.

Assessment Code	Description	Action Required
M[1]	The relative percent difference (RPD) between weak acid dissociable (WAD) cyanide detections in primary sample MWR-7A and field duplicate DUP06 was high at 96%.	Amec Foster Wheeler J qualified the detected WAD cyanide recoveries from the sample and field duplicate due to potential sampling and/or analytical imprecision. (J-FD)
X[1]	Sulfate reporting limits were elevated for sample DUP03 and the re-extraction of samples DUP04, MW-12A, MW13-01P, MW13-01S, MW13-02P, MW13-05P, MW13-06A, MW13-06P, MW13-06S, MW13-07P, MW13-08P, MW13-08S, MW13-10P, MW13-11S, MW13-12P, MW13-16S, MW-41S, MWR-15S, and MWR-27S.	Reporting limits for sulfate were elevated to concentrations between 2.0 milligrams per liter (mg/L) and 20.0 mg/L in the affected samples due to sample dilution. Sulfate was detected in all of the affected samples and data usability is not adversely affected by the elevated limits.
X[2]	The fluoride reporting limit was elevated for the re-extraction of sample MW13-07P.	The reporting limit for fluoride was elevate to a concentration of 0.500 mg/L in the affected sample due to sample dilution. Fluoride was detected in the sample and data usability is not adversely affected by the elevated limit.
X[3]	Total cyanide reporting limits were elevated for the re-extraction of samples MW13-01P, MW13-06P, DUP03, MW13-01S, MW13-05P, MW13-06A, DUP04, MW13-06S, MW13-07P, MW13-08P, MW13-08S, MWR-15S, and MWR-27S.	Reporting limits for total cyanide were elevated to concentrations between 0.0100 mg/L and 5.00 mg/L in the affected samples due to sample dilution. Total cyanide was detected in all of the affected samples and data usability is not adversely affected by the elevated limits.
X[4]	WAD Cyanide reporting limits were elevated for the re-extraction of samples MW13-01P and DUP03.	Reporting limits for WAD cyanide were elevated to a concentration of 0.0500 mg/L in the affected samples due to sample dilution. WAD cyanide was detected in both samples and data usability is not adversely affected by the elevated limit.
X[5]	Total cyanide recoveries were outside of project-specified limits at -290% in the MS performed on sample MWR-15S; and at 150% and 151%, respectively in the MS and MSD performed on sample MW13-08P.	Total cyanide concentrations detected in the native unspiked samples were greater than four times the spike concentrations, and data usability for these samples cannot be evaluated based on MS/MSD recoveries.

Analyte	Average Reporting Limit		Primary Concentration		Field Duplicate Concentration		RPD	Notes
MW13-01P_2018039 and DUP03_20180319								
Sulfate	10.0	mg/L	130		129		1%	
Fluoride	0.10	mg/L	19.9		20		1%	
Total Cyanide	5.00	mg/L	47.7		52		9%	
WAD Cyanide	0.050	mg/L	1.24		0.945		27%	
MW13-06P_20180320 and DUP04-20180320								
Sulfate	20.0	mg/L	590		601		2%	
Fluoride	0.10	mg/L	3.95		4.02		2%	
Total Cyanide	0.050	mg/L	2.15		1.96		9%	
WAD Cyanide	0.0050	mg/L	0.0636		0.0629		1%	
MW13-02S_20180320 and DUP05_20180320								
Sulfate	0.10	mg/L	14.9		15		1%	
Fluoride	1.0	mg/L	0.63		0.626		1%	
Total Cyanide	0.0050	mg/L	0.0665		0.0562		17%	
WAD Cyanide	0.0050	mg/L	0.005	U	0.0073		NC	± RL
MWR-7A_20180321 and DUP06_20180321								
Sulfate	1.0	mg/L	20.3		20.5		1%	
Fluoride	0.10	mg/L	0.768		0.758		1%	
Total Cyanide	0.0050	mg/L	0.277		0.32		14%	
WAD Cyanide	0.0050	mg/L	0.0079		0.0225		96%	J-FD

Notes:
FD = High field duplicate RPD
mg/L = milligrams per liter
NC = not calculable
RPD = relative percent difference
± RL = the difference between analyte concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.
RL = Reporting limit
WAD = weak acid dissociable

Qualifiers Added During Data Assessment				
Sample IDs	**Analytical Method**	**Analytes**	**Concentrations**	**Qualifiers and Reason Codes**
MWR-7A	SM 4500-CN I	WAD Cyanide	0.0079 mg/L	J-FD
DUP06	SM 4500-CN I	WAD Cyanide	0.0225 mg/L	J-FD

Reason Codes:
FD = High field duplicate RPD

APPENDIX F

CERCLA Inspection Forms

CERCLA Landfill- Leachate Collection System
Quarterly/Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Date/Time: 12/11/17

Inspected by: WJM Inspectors Signature:

Reviewed by: Reviewer's Signature:

Note: This form replaces the CERCLA Landfill-LCS weekly inspection form

SAFETY INSPECTION

	Observation	Remarks
What tasks are you doing today?	Driving	
MX-6 Calibrated?	YES	
In Reach device worn?	YES	
Have AHAs been reviewed?	YES	
Check in with AMEC Office performed?	YES	

Cover Inspection:

	Observation	Remarks
Top Erosion or Damage	NO	
Top Settling / Subsidence	NO	
Ponded Water (or signs of)	NO	
Animal Burrows	NO	
Woody Vegetation	NO	
Benchmarks (1 on top of each lobe)	YES	
Side Riprap Erosion	NO	
Slope Stability / Failures	NO	

Drainage System:

	Observation	Remarks
Ponded Water (or signs of)	NO	
Channels Blocked (weeds, litter, silt)	NO	
Culverts Blocked (weeds, litter, silt)	NO	

Area Adjacent to Landfill:

	Observation	Remarks
Riprap Erosion	NO	
Ponded Water / Silt Deposits	NO	
Well Heads (good condition, locked)	YES	

Fences & Gates:

	Observation	Remarks
Warning Signs in Place (minimum 10)	YES	
Gate Locks Secured and Lock Boxes in Place	YES	
Door Secure and Lock Box in Place	YES	
Damaged Fence or Posts	NO	
Tumbleweeds (safety or fire hazard)	NO	
Gaps / Animal Burrows Beneath Fence	NO	
Top Wires Secure	YES	

LS#1:

	Observation	Remarks
Pump Operating	YES	In OFF Cycle
Pump Switch (on/off/auto)	AUTO	
Control Panel in Good Condition	YES	
Lift Station Lights	YES	
Electrical Cables in Good Condition	YES	
Manhole Cover Secured	YES	
Piping in Good Condition	YES	
Depth to Leachate (ft)	16.11	

CERCLA Landfill- Leachate Collection System
Quarterly/Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

LS#2:

	Observation	Remarks
Pump Operating	Yes	in off cycle
Pump Switch (on/off/auto)	AUTO	
Control Panel in Good Condition	Yes	
Lift Station Lights	Yes	
Electrical Cables in Good Condition	Yes	
Manhole Cover Secured	Yes	
Piping in Good Condition	Yes	
Depth to Leachate (ft)	17.92	
Totalizer Reading (gal)	588320	

Sump:

	Observation	Remarks
Float Functioning Appropriately	Yes	
Depth to Water (ft)	6.49	
Totalizer Reading (cubic ft)	235314	

MH#1:

	Observation	Remarks
Manhole Cover Secured	Yes	
Depth to Leachate (ft)	11.03	

MH#2:

	Observation	Remarks
Manhole Cover Secured	Yes	
Depth to Leachate (ft)	14.03	

MH#3:

	Observation	Remarks
Manhole Cover Secured	Yes	
Depth to Leachate (ft)	11.05	

MH#4:

	Observation	Remarks
Manhole Cover Secured	Yes	
Depth to Leachate (ft)	14.70	
Nutrient Shed Secured	Yes	

Quarterly:

	Observation	Remarks
LS 1 Pump #1- Water Level Between High and Low Floats	Yes	
LS 1 Pump #2- Water Level Between High and Low Floats	Yes	
LS 2 Pump #1- Water Level Between High and Low Floats	Yes	
LS 2 Pump #2- Water Level Between High and Low Floats	Yes	
LS1 Pump #1- Pulled or Checked		
LS1 Pump #2- Pulled or Checked		
LS2 Pump #1- Pulled or Checked		
LS2 Pump #2- Pulled or Checked		
LS1 Pump #1- Piping Observed/Checked		
LS1 Pump #2- Piping Observed/Checked		
LS2 Pump #1- Piping Observed/Checked		
LS2 Pump #2- Piping Observed/Checked		
Alarm Light at LS1 Tested	Yes	
Alarm Light at LS2 Tested	Yes	
Perimeter Berms Inspected	Yes	
Access Roads Inspected	Yes	

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Annually:

	Observation	Remarks
Double-wall Pipe Alarm Tested		
Visual Inspection of 300,000 Gallon Tank		
Visual Inspection of 4,700 Gallon Tank		

Notes:
LS = Lift Station
MH = Manhole

General remarks and items requiring correction:

Photo Documentation:

Appendix F

CERCLA Treatment System
Quarterly Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Date/Time: 12/11/17

Inspected by: WDSM Inspectors Signature:

Reviewed by: CP Reviewer's Signature:

Note: This form replaces the CERCLA Treatment System weekly and monthly inspection forms

Fences & Gates:

	Observation	Remarks
Warning Signs in Place	Yes	
Gate Locks Secured	Yes	
Damaged Fence or Posts	NO	
Tumbleweeds (safety or fire hazard)	NO	
Gaps / Animal Burrows Beneath Fence	NO	
Top Wires Secure	Yes	

Fire Extinguisher check:

	Observation	Remarks
Within Date (Monthly)	Yes	

CERCLA Building:

	Observation	Remarks
Building Lock Secured	Yes	
Runoff from building drain to secondary containment	Yes	

Tank Containment:

	Observation	Remarks
Pump Operating	NO	
Pump Switch (on/off/auto)	OFF	
Sump Free of Debris	NO	
Asphalt Cracking	Yes	

Treatment System:

Totalizer Reading (gals x1000)	illegible	
Observed Flow Rate (gpm)	8.9	
Alarm Conditions Present	NO	
Pressure Reading: I-01, PSI	4.0	
Pressure Reading: I-03, Digital, PSI	3	
Pressure Reading: I-04, PSI	3.0	
Pressure Reading: I-05, PSI	4.0	
Pressure Reading: I-06, PSI	4.0	
Pressure Reading: I-07, Digital, PSI	7.9	
Pressure Reading: I-08, PSI	5	
Pressure Reading: I-09, PSI	5	
Pressure Reading: I-10, PSI	6	
Pressure Reading: I-11, PSI	5	
Pressure Reading: I-12, PSI	6	
Pressure Reading: I-13, PSI	6	
Pressure Reading: I-14, PSI	5	
Pressure difference between I-03 and I-07 less that 3PSI	Yes	
BF-100 and BF-200 Changed	NO	
BF-300 Changed	NO	
Quantity of spare bag filters	220	
Autodialer Tested	Yes	
Flow meter FIT I-02 Tested	Yes	
Pressure Transmitter PSH-1 Tested	Yes	
Pressure Transmitter PSH-2 Tested	Yes	
Flow Indiciator I-16 Tested	Yes	
Leak Detector I-18 Tested	Yes	
Float Switch I-19 Tested	Yes	
Temperature Sensor TEMP I-17 Checked	Yes	
Main Telemetry Panel UPS Tested	Yes	
Monthly Mid-Effluent Sample Collected	NO	
Monthly Effluent Sample Collected	NO	

CERCLA Treatment System
Quarterly Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Tank Inspection:

	Observation	Remarks
Visually Inspect Above-ground Piping for Leaks	Yes	
Leaks Found- Note Repairs	—	
If Leaks- Spill Cleaned up	—	
Visually Inspect Tank for Leaks	Yes	
Leaks Found- Note Repairs	—	
If Leaks- Spill Cleaned up	—	
Depth to water in tank (ft)	7.5"	
Aerator is Operating	NA	
Influent Totalizer Reading (gal) x 100	20816.2	
Effluent Totalizer Reading (gal)	20975	

General Remarks and Items Requiring Correction:

CERCLA Landfill- Leachate Collection System
Quarterly/Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Date/Time: 3/22/18

Inspected by: JVL/WJM

Inspectors Signature: [signature] wjm

Reviewed by: [signature]

Reviewer's Signature: [signature]

Note: This form replaces the CERCLA Landfill-LCS weekly inspection form

SAFETY INSPECTION

	Observation	Remarks
What tasks are you doing today?	Q-OTM	
MX-6 Calibrated?	Dumped	
In Reach device worn?	Yes	
Have AHAs been reviewed?	Yes	
Check in with AMEC Office performed?	Yes	

Cover Inspection:

	Observation	Remarks
Top Erosion or Damage	NO	
Top Settling / Subsidence	NO	
Ponded Water (or signs of)	NO	
Animal Burrows	NO	
Woody Vegetation	NO	
Benchmarks (1 on top of each lobe)	Yes	
Side Riprap Erosion	NO	
Slope Stability / Failures	NO	

Drainage System:

	Observation	Remarks
Ponded Water (or signs of)	NO	
Channels Blocked (weeds, litter, silt)	NO	
Culverts Blocked (weeds, litter, silt)	NO	

Area Adjacent to Landfill:

	Observation	Remarks
Riprap Erosion	NO	
Ponded Water / Silt Deposits	NO	
Well Heads (good condition, locked)	Yes	

Fences & Gates:

	Observation	Remarks
Warning Signs in Place (minimum 10)	Yes	
Gate Locks Secured and Lock Boxes in Place	Yes	
Door Secure and Lock Box in Place	Yes	
Damaged Fence or Posts	NO	
Tumbleweeds (safety or fire hazard)	NO	
Gaps / Animal Burrows Beneath Fence	Yes	Filled
Top Wires Secure	Yes	

LS#1:

	Observation	Remarks
Pump Operating	Yes	
Pump Switch (on/off/auto)	Auto	
Control Panel in Good Condition	Yes	
Lift Station Lights	Yes	
Electrical Cables in Good Condition	Yes	
Manhole Cover Secured	Yes	
Piping in Good Condition	Yes	
Depth to Leachate (ft)	15.88	

CERCLA Landfill- Leachate Collection System
Quarterly/Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

LS#2:

	Observation	Remarks
Pump Operating	Yes	
Pump Switch (on/off/auto)	Auto	
Control Panel in Good Condition	Yes	
Lift Station Lights	Yes	
Electrical Cables in Good Condition	Yes	
Manhole Cover Secured	Yes	
Piping in Good Condition	Yes	
Depth to Leachate (ft)	16.55	
Totalizer Reading (gal)	→	293990

Sump:

	Observation	Remarks
Float Functioning Appropriately	Yes	
Depth to Water (ft)	6.55	
Totalizer Reading (cubic ft)	→	24357.52

MH#1:

	Observation	Remarks
Manhole Cover Secured	Yes	
Depth to Leachate (ft)	11.60	

MH#2:

	Observation	Remarks
Manhole Cover Secured	Yes	
Depth to Leachate (ft)	14.60	

MH#3:

	Observation	Remarks
Manhole Cover Secured	Yes	
Depth to Leachate (ft)	11.97	

MH#4:

	Observation	Remarks
Manhole Cover Secured	Yes	
Depth to Leachate (ft)	15.60	Damp
Nutrient Shed Secured	Yes	

Quarterly:

	Observation	Remarks
LS 1 Pump #1- Water Level Between High and Low Floats	operation	High = ~11.0', Pump On = 15.0', Pump Off = ~19.5'
LS 1 Pump #2- Water Level Between High and Low Floats	↓	" " "
LS 2 Pump #1- Water Level Between High and Low Floats		High = ~13.0', Pump On = ~16.5', Pump Off = ~19.0'
LS 2 Pump #2- Water Level Between High and Low Floats		" " "
LS1 Pump #1- Pulled or Checked	Yes	
LS1 Pump #2- Pulled or Checked	Yes	
LS2 Pump #1- Pulled or Checked	Yes	
LS2 Pump #2- Pulled or Checked	Yes	
LS1 Pump #1- Piping Observed/Checked	Yes	
LS1 Pump #2- Piping Observed/Checked	Yes	
LS2 Pump #1- Piping Observed/Checked	Yes	
LS2 Pump #2- Piping Observed/Checked	Yes	
Alarm Light at LS1 Tested	Yes	
Alarm Light at LS2 Tested	Yes	
Perimeter Berms Inspected	Yes	
Access Roads Inspected	Yes	

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Annually:

	Observation	Remarks
Double-wall Pipe Alarm Tested	YES	
Visual Inspection of 300,000 Gallon Tank	N/A	
Visual Inspection of 4,700 Gallon Tank	YES	New Tank

Notes:
LS = Lift Station
MH = Manhole

General remarks and items requiring correction:

Photo Documentation:

CERCLA Treatment System
Quarterly Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Date/Time: 3/22/18

Inspected by: WJM JVG Inspectors Signature: [signature]

Reviewed by: [signature] Reviewer's Signature: [signature]

Note: This form replaces the CERCLA Treatment System weekly and monthly inspection forms

Fences & Gates:

	Observation	Remarks
Warning Signs in Place	yes	
Gate Locks Secured	yes	
Damaged Fence or Posts	NO	
Tumbleweeds (safety or fire hazard)	NO	
Gaps / Animal Burrows Beneath Fence	NO	
Top Wires Secure	yes	

Fire Extinguisher check:

	Observation	Remarks
Within Date (Monthly)	yes	

CERCLA Building:

	Observation	Remarks
Building Lock Secured	yes	
Runoff from building drain to secondary containment	yes	

Tank Containment:

	Observation	Remarks
Pump Operating	yes	in off cycle
Pump Switch (on/off/auto)	Auto	
Sump Free of Debris	yes	
Asphalt Cracking	yes	

Treatment System:

Totalizer Reading (gals x1000)	→	2511.1
Observed Flow Rate (gpm)	9.8	
Alarm Conditions Present	NO	
Pressure Reading: I-01, PSI	37	
Pressure Reading: I-03, Digital, PSI	4.1	
Pressure Reading: I-04, PSI	4.5	
Pressure Reading: I-05, PSI	4.0	
Pressure Reading: I-06, PSI	5.0	
Pressure Reading: I-07, Digital, PSI	3.9	
Pressure Reading: I-08, PSI	4.5	
Pressure Reading: I-09, PSI	5.5	
Pressure Reading: I-10, PSI	5.0	
Pressure Reading: I-11, PSI	4.0	
Pressure Reading: I-12, PSI	0.0	
Pressure Reading: I-13, PSI	0.0	
Pressure Reading: I-14, PSI	4	
Pressure difference between I-03 and I-07 less that 3PSI	yes	
BF-100 and BF-200 Changed	NO	
BF-300 Changed	NO	
Quantity of spare bag filters	>20	
Autodialer Tested	yes	
Flow meter FIT I-02 Tested	yes	flow rate correct
Pressure Transmitter PSH-1 Tested	yes	
Pressure Transmitter PSH-2 Tested	yes	
Flow Indiciator I-16 Tested	yes	
Leak Detector I-18 Tested	yes	
Float Switch I-19 Tested	yes	
Temperature Sensor TEMP I-17 Checked	yes	checked against temp
Main Telemetry Panel UPS Tested	yes	
Monthly Mid-Effluent Sample Collected	N/A	
Monthly Effluent Sample Collected	N/A	

CERCLA Treatment System
Quarterly Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Tank Inspection:

	Observation	Remarks
Visually Inspect Above-ground Piping for Leaks	YES	
Leaks Found- Note Repairs	NO	
If Leaks- Spill Cleaned up	N/A	
Visually Inspect Tank for Leaks	YES	
Leaks Found- Note Repairs	NO	
If Leaks- Spill Cleaned up	N/A	
Depth to water in tank (ft)	OFF	
Aerator is Operating	N/A	
Influent Totalizer Reading (gal) x 100	2512	
Effluent Totalizer Reading (gal)	→	12055160

General Remarks and Items Requiring Correction:

APPENDIX G

Scrubber Sludge Ponds Inspection Form

Scrubber Sludge Ponds
Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

amec foster wheeler

Date/Time: 6/15/2017

Inspected by: Jason Gardner
Bill McFarland

Inspectors Signature:

Reviewed by: Christy Dutman

Reviewer's Signature:

Note: This form replaces the SSP weekly inspection form

Soil Cover Inspection:

	Observation	Remarks
Top Erosion or Damage	yes	covered 5 spots where sludge has resurfaced
Side Gulley Clear	yes	
Animal Burrows	yes	Ant and small animal burrows filled

Drainage System:

	Observation	Remarks
Ponded Water (or signs of)	no	
Sedimentation	no	
Channels Blocked (weeds, litter, silt)	no	
Culverts Blocked (weeds, litter, silt)	no	

Fences and Gates:

	Observation	Remarks
Warning Signs in Place	yes	
Gate Locks Secured	yes	
Damaged Fence or Posts	yes	one section along back fence damaged by tree.
Tumbleweeds or Other Windblown Debris	no	Repaired
Fence Fabric Secure	yes	
Top Wire Secure	yes	repaired
Fence Clear of Trees	yes	6 trees

Area Adjacent to Scrubber Sludge Ponds:

	Observation	Remarks
Vegetation Control	yes	
Intrusions	no	

General remarks and items requiring correction

None

APPENDIX H

Monthly POTW Reports

Lockheed Martin Corporation
Energy, Environment, Safety and Health
2550 North Hollywood Way, Suite 406 Burbank, CA 91505
Telephone: 818.847.0197 Facsimile: 818.847.0256

LOCKHEED MARTIN

November 13, 2017

Jill Hoyenga
Regulatory Compliance Manager
City of The Dalles, Dept. of Public Works
1215 West First Street
The Dalles, OR 97058

Subject: **Discharge Monitoring at the Lockheed Martin Corporation, 3313 West Second Street, The Dalles, OR 97058 Reporting Period: October 2017**

Reference: **Industrial Waste Discharge Permit No. 2016-003**

Dear Ms. Hoyenga:

Pursuant to the referenced permit, Lockheed Martin Corporation hereby submits the industrial waste discharge monitoring report for the October 2017 reporting period at the Lockheed Martin The Dalles site located at 3313 West Second Street, The Dalles, Oregon 97058.

During the month of October, the system operated for three days and a total of 9,370 gallons of water were discharged under Permit No. 2016-003 to the City of The Dalles Publicly Owned Treatment Works. Discharged water consisted of pretreated landfill leachate, and/or groundwater sampling decontamination water from environmental remediation at the Site. No permit violations occurred and required analytical samples were collected.

Daily flow (total, maximum, and average) and pH data (daily maximum and minimum) are included in Table 1. Laboratory analytical data are summarized in Table 2. Laboratory reports including chain of custody and quality control/quality assurance documentation are included in Attachment A.

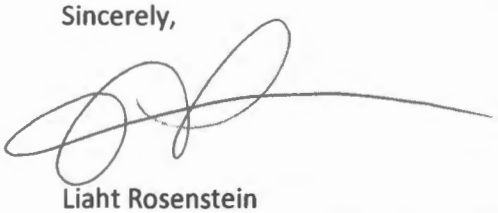
Please call me at (720) 842-6121 or send an email to liaht.rosenstein@lmco.com if you have any questions regarding this report.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the 13th day of November, 2017 at the offices of Lockheed Martin, Burbank, California.

Sincerely,



Liaht Rosenstein
Environmental Remediation Project Lead
Lockheed Martin Corporation

Attachments:
Table 1—Daily Flow and pH Data
Table 2—Laboratory Analytical
Attachment A – Laboratory Analytical Reports

cc: Mr. Rick Wolf, CH2MHill

Table 1
Daily Flow and pH Data, October 2017
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Day	Daily Flow Total	Daily Flow Max	Daily Flow Average	pH Daily Min	pH Daily Max
Units	gallons per day	gallons per minute	gallons per minute	SU	SU
Permit Limit	36,000	30	30	6.0	9.0
10/1/2017	0				
10/2/2017	0				
10/3/2017	0				
10/4/2017	0				
10/5/2017	0				
10/6/2017	0				
10/7/2017	0				
10/8/2017	0				
10/9/2017	1,314	30.2	25.2	7.26	7.43
10/10/2017	0				
10/11/2017	0				
10/12/2017	0				
10/13/2017	0				
10/14/2017	0				
10/15/2017	0				
10/16/2017	0				
10/17/2017	0				
10/18/2017	0				
10/19/2017	0				
10/20/2017	7,386	28.2	26.8	7.46	7.60
10/21/2017	0				
10/22/2017	0				
10/23/2017	0				
10/24/2017	670	29.2	27.6	7.50	7.73
10/25/2017	0				
10/26/2017	0				
10/27/2017	0				
10/28/2017	0				
10/29/2017	0				
10/30/2017	0				
10/31/2017	0				
Monthly Total	9,370				
Min				7.26	
Max		30.2	27.6		7.73

Notes:
Max - Maximum
Min - Minimum
SU - Standard Units

Table 2
Laboratory Analytical Results, October 2017
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Date Sampled	Date Final Analytical Received	Sample Type	Parameter	Cyanide, Total	BOD-5	TSS	Fluoride	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
			Analytical Method	EPA 335.4	SM5210B	SM2540D	EPA 300.0	EPA 6020									
			Units	mg/L	mg/L	mg/L	mg/L	mg/L									
			Permit Limit	0.33	--	--	--	0.11	0.09	2.15	0.09	0.027	--	0.79	0.50	1.18	4.5
10/9/2017	10/20/2017	Composite	POTW-20171009	0.005 U	NT	NT	**9.53**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
10/24/2017	11/3/2017	Composite	POTW-20171024	0.005 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:
BOD-5= 5 day biological oxygen demand
Bold= Detected result
mg/L= milligrams per liter
NT= Not Tested
Pending = Sample has been submitted to the laboratory, but analytical results were unavailable at month's end.
TSS= Total suspended solids
U = The analyte was analyzed for, but was not detected above the method reporting limit. MRL has been reported.
Concentration exceeds permit limit stated in Industrial Wastewater Discharge Permit No. 2016-003.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, October 20, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556

Enclosed are the results of analyses for work order A7J0260, which was received by the laboratory on 10/10/2017 at 11:49:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20171009	A7J0260-01	Water	10/09/17 15:30	10/10/17 11:49

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20171009 (A7J0260-01)			**Matrix: Water**					
Batch: 7100617								
Fluoride	**9.53**	0.100	0.100	mg/L	1	10/10/17 19:19	EPA 300.0-LL	

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20171009 (A7J0260-01RE1)			**Matrix: Water**		**Batch: 7100801**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	10/17/17 13:48	EPA 335.4	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7100617 - Method Prep: Aq							**Water**					
Blank (7100617-BLK1)					Prepared: 10/10/17 13:43		Analyzed: 10/10/17 18:36					
EPA 300.0-LL												
Fluoride	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
LCS (7100617-BS1)					Prepared: 10/10/17 13:43		Analyzed: 10/10/17 18:57					
EPA 300.0-LL												
Fluoride	1.43	0.100	0.100	mg/L	1	1.50	---	95	90-110%	---	---	
Duplicate (7100617-DUP1)					Prepared: 10/10/17 13:43		Analyzed: 10/10/17 19:40					
QC Source Sample: POTW-20171009 (A7J0260-01)												
EPA 300.0-LL												
Fluoride	**9.70**	0.100	0.100	mg/L	1	---	9.53	---	---	2	15%	
Matrix Spike (7100617-MS1)					Prepared: 10/10/17 13:43		Analyzed: 10/10/17 20:02					
QC Source Sample: POTW-20171009 (A7J0260-01)												
EPA 300.0-LL												
Fluoride	11.3	0.104	0.104	mg/L	1	1.56	9.53	115	80-120%	---	---	

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7100801 - Method Prep: Aq							**Water**					
Blank (7100801-BLK1)					Prepared: 10/17/17 08:00		Analyzed: 10/17/17 12:03					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7100801-BS1)					Prepared: 10/17/17 08:00		Analyzed: 10/17/17 12:05					
EPA 335.4												
Cyanide, Total	0.271	0.00500	0.00500	mg/L	1	0.250	---	108	85-115%	---	---	

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7100617							
A7J0260-01	Water	EPA 300.0-LL	10/09/17 15:30	10/10/17 13:43	10mL/10mL	10mL/10mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7100801							
A7J0260-01RE1	Water	EPA 335.4	10/09/17 15:30	10/17/17 08:00	6mL/6mL	6mL/6mL	1.00

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

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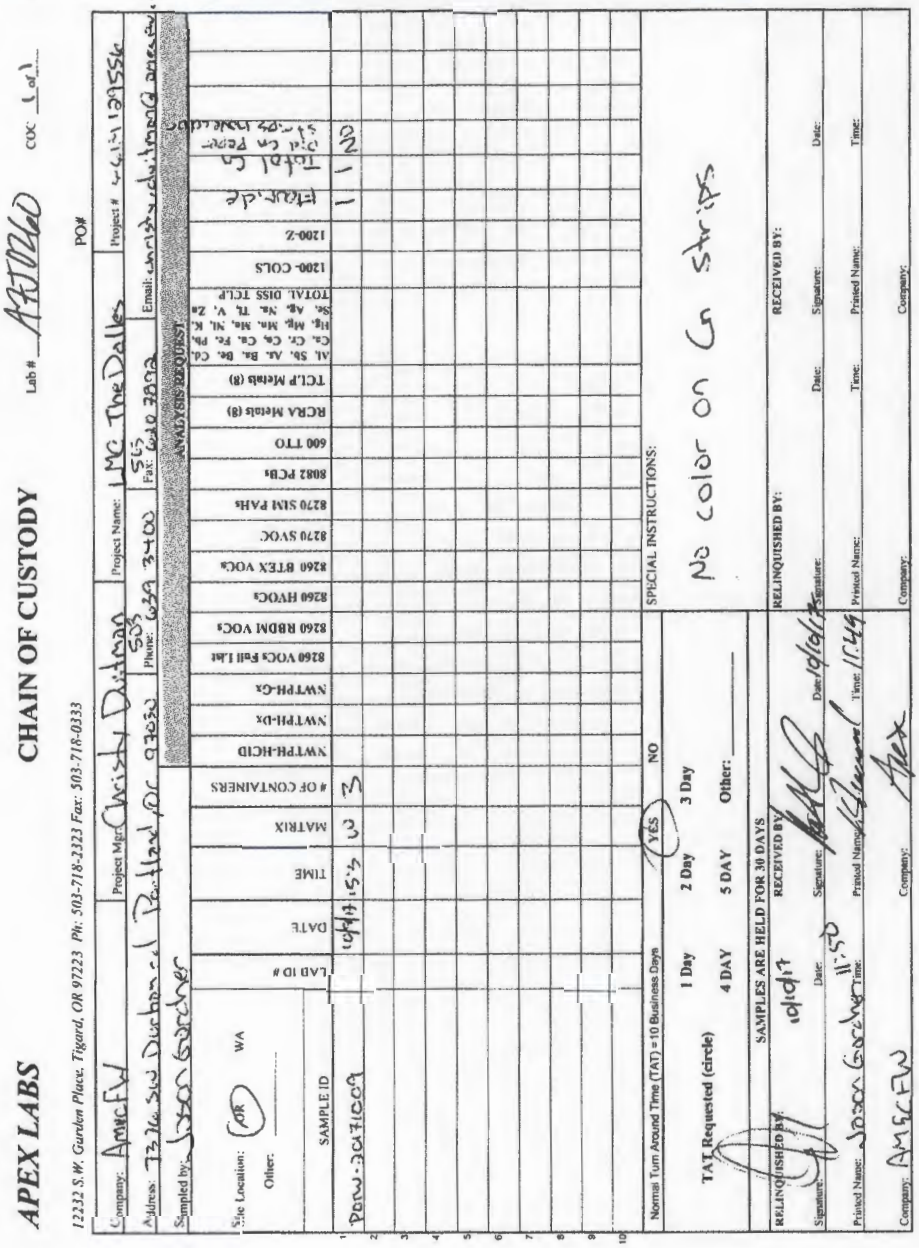
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/20/17 13:31

APEX LABS COOLER RECEIPT FORM

Client: Amec FW Element WO#: A7 J0260

Project/Project #: LMC The Dalles 661M129556

Delivery info:

Date/Time Received: 10/10/17 @ 11:49 By: MS

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: MS : 10/10/17 @ 11:50

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	4.3						
Received on Ice? (Y/N)	Y						
Temp. Blanks? (Y/N)	N						
Ice Type: (Gel/Real/Other)	G						
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: MS : 10/10/17 @ 11:52

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes X No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___ NA___

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, November 3, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.01

Enclosed are the results of analyses for work order A7J0791, which was received by the laboratory on 10/24/2017 at 4:10:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/03/17 17:15

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW_20171024	A7J0791-01	Water	10/24/17 12:50	10/24/17 16:10

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/03/17 17:15

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW_20171024 (A7J0791-01)			**Matrix: Water**		**Batch: 7101277**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	10/30/17 13:26	EPA 335.4	

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/03/17 17:15

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7101277 - Method Prep: Aq							**Water**					
Blank (7101277-BLK1)					Prepared: 10/30/17 08:54 Analyzed: 10/30/17 13:18							
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7101277-BS1)					Prepared: 10/30/17 08:54 Analyzed: 10/30/17 13:20							
EPA 335.4												
Cyanide, Total	0.266	0.00500	0.00500	mg/L	1	0.250	---	106	85-115%	---	---	

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/03/17 17:15

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7101277							
A7J0791-01	Water	EPA 335.4	10/24/17 12:50	10/30/17 08:54	6mL/6mL	6mL/6mL	1.00

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/03/17 17:15

Notes and Definitions

Qualifiers:

Notes and Conventions:

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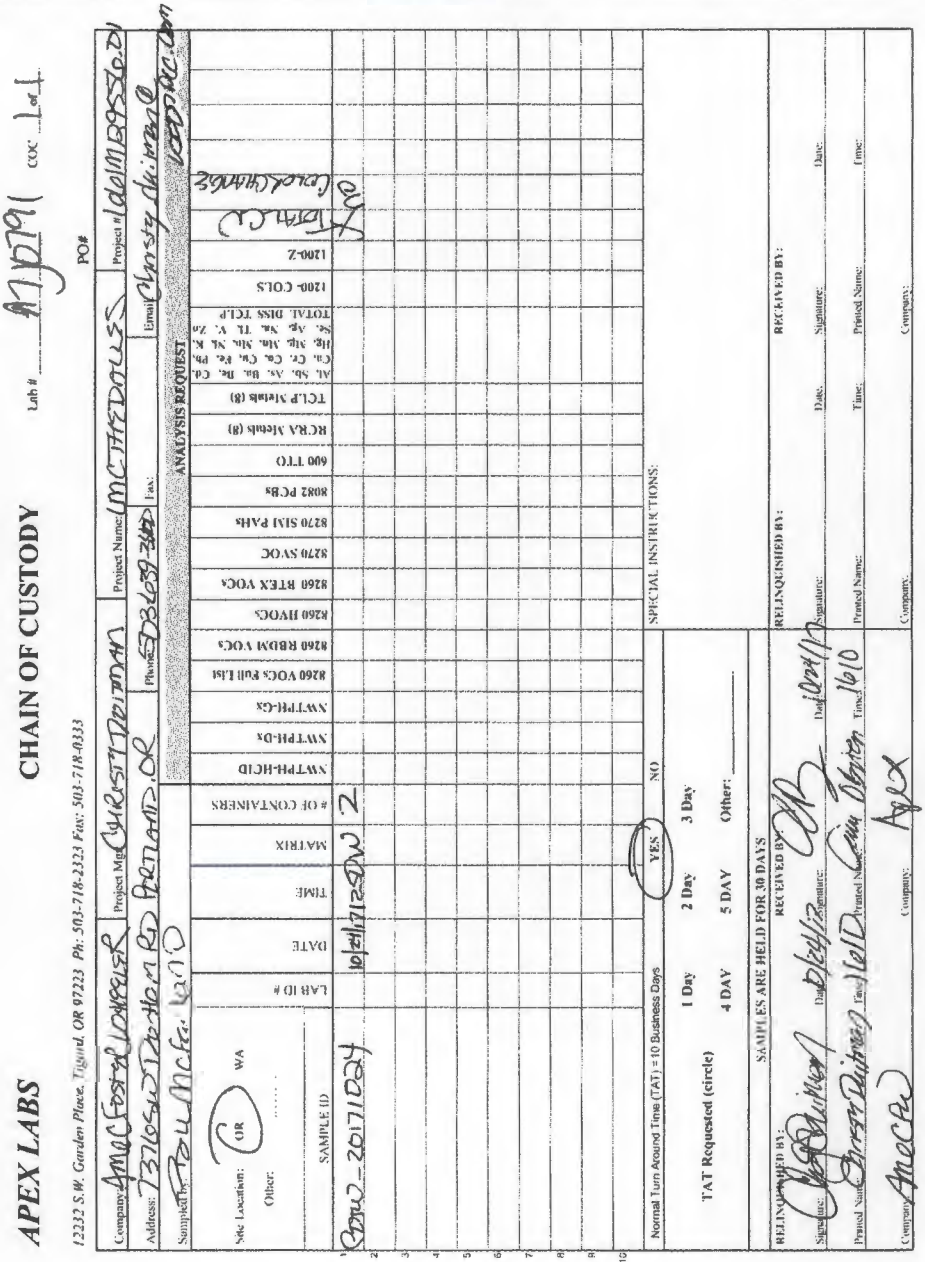
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/03/17 17:15



Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.01	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/03/17 17:15

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A7 J0791

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 10/27/17 @ 1610 By: ab

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: ab : 10/27/17 @ 1615

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.0						
Received on Ice? (Y/N)	Y						
Temp. Blanks? (Y/N)	Y						
Ice Type: (Gel/Real/Other)	G						
Condition:							

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were grabs not applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: ab : 10/27/17 @ 1620

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes X No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___ NA___

Comments

Additional Information:

Labeled by: Witness: JM Cooler Inspected by: ab See Project Contact Form: Y

KM

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Lockheed Martin Corporation
Energy, Environment, Safety and Health
2550 North Hollywood Way, Suite 406 Burbank, CA 91505
Telephone: 818.847.0197 Facsimile: 818.847.0256

LOCKHEED MARTIN

December 12, 2017

Jill Hoyenga
Regulatory Compliance Manager
City of The Dalles, Dept. of Public Works
1215 West First Street
The Dalles, OR 97058

Subject: **Discharge Monitoring at the Lockheed Martin Corporation, 3313 West Second Street, The Dalles, OR 97058 Reporting Period: November 2017**

Reference: **Industrial Waste Discharge Permit No. 2016-003**

Dear Ms. Hoyenga:

Pursuant to the above referenced permit, Lockheed Martin Corporation hereby submits the industrial waste discharge monitoring report for the November 2017 reporting period at the Lockheed Martin The Dalles site located at 3313 West Second Street, The Dalles, Oregon 97058.

During the month of November, the system operated for 12 days and a total of 55,994 gallons of water were discharged under Permit No. 2016-003 to the City of The Dalles Publicly Owned Treatment Works. Discharged water consisted of pretreated landfill leachate, and/or groundwater sampling decontamination water from environmental remediation at the Site. No permit violations occurred and the required analytical samples were collected.

Daily flow (total, maximum, and average) and pH data (daily maximum and minimum) are included in Table 1. Laboratory analytical data are summarized in Table 2. Laboratory reports including chain of custody and quality control/quality assurance documentation are included in Attachment A.

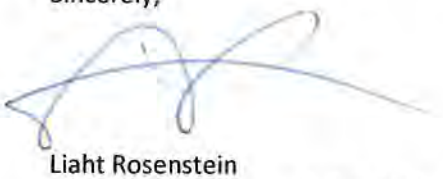
Please call me at (303) 335-5489 or send an email to liaht.rosenstein@lmco.com if you have any questions regarding this report.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the 12th day of December, 2017 at the offices of Lockheed Martin, El Segundo, California.

Sincerely,



Liaht Rosenstein
Environmental Remediation Project Lead
Lockheed Martin Corporation

Attachments:

Table 1—Daily Flow and pH Data
Table 2—Laboratory Analytical
Attachment A – Laboratory Analytical Reports

cc: Mr. Rick Wolf, CH2MHill

Table 1
Daily Flow and pH Data, November 2017
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Day	Daily Flow Total	Daily Flow Max	Daily Flow Average	pH Daily Min	pH Daily Max
Units	gallons per day	gallons per minute	gallons per minute	SU	SU
Permit Limit	36,000	30	30	6.0	9.0
11/1/2017	0				
11/2/2017	0				
11/3/2017	0				
11/4/2017	0				
11/5/2017	0				
11/6/2017	0				
11/7/2017	0				
11/8/2017	0				
11/9/2017	8,006	24.1	23.1	7.51	7.85
11/10/2017	0				
11/11/2017	0				
11/12/2017	4,977	25.1	24.4	7.39	8.25
11/13/2017	2,279	25.1	24.1	7.37	7.56
11/14/2017	0				
11/15/2017	0				
11/16/2017	2,889	24.1	24.1	7.29	7.52
11/17/2017	3,430	24.1	24.0	7.39	7.60
11/18/2017	0				
11/19/2017	3,853	24.0	23.4	7.36	7.72
11/20/2017	5,745	24.0	23.5	7.36	8.33
11/21/2017	0				
11/22/2017	0				
11/23/2017	6,447	24.0	23.6	7.24	7.55
11/24/2017	5,969	24.0	23.5	7.43	7.69
11/25/2017	0				
11/26/2017	3,649	24.0	23.6	7.36	8.29
11/27/2017	6,016	24.0	23.6	7.44	7.11
11/28/2017	0				
11/29/2017	2,734	24.0	23.6	7.34	7.73
11/30/2017	0				
Monthly Total	55,994				
Min				7.24	
Max		25.1	24.4		8.33

Notes:
Max - Maximum
Min - Minimum
SU - Standard Units

Table 2
Laboratory Analytical Results, November 2017
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Date Sampled	Date Final Analytical Received	Sample Type	Parameter	Cyanide, Total	BOD-5	TSS	Fluoride	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
			Analytical Method	EPA 335.4	SM5210B	SM2540D	EPA 300.0	EPA 6020									
			Units	mg/L	mg/L	mg/L	mg/L	mg/L									
			Permit Limit	0.33	--	--	--	0.11	0.09	2.15	0.09	0.027	--	0.79	0.50	1.18	4.5
11/8/2017	11/29/2017	Composite	POTW-20171109	0.005 U	NT	NT	**8.75**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
11/20/2017	pending	Composite	POTW-20171120	pending	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:
BOD-5 = 5 day biological oxygen demand
Bold = Detected result
mg/L = milligrams per liter
NT = Not Tested
Pending = Sample has been submitted to the laboratory, but analytical results were unavailable at month's end.
TSS = Total suspended solids
U = The analyte was analyzed for, but was not detected above the method reporting limit. MRL has been reported.
Bold = Concentration exceeds permit limit stated in Industrial Wastewater Discharge Permit No. 2016-003.

Appendix C

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Wednesday, November 29, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 761M129557

Enclosed are the results of analyses for work order A7K0377, which was received by the laboratory on 11/10/2017 at 1:40:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/29/17 17:04

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20171109	A7K0377-01	Water	11/09/17 16:00	11/10/17 13:40

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: LMC The Dalles	
7376 SW Durham Road	Project Number: 761M129557	Reported:
Portland, OR 97224	Project Manager: Christy Duitman	11/29/17 17:04

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20171109 (A7K0377-01)			**Matrix: Water**					
Batch: 7110970								
Fluoride	**8.75**	0.100	0.100	mg/L	1	11/22/17 18:51	EPA 300.0-LL	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/29/17 17:04

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20171109 (A7K0377-01)			**Matrix: Water**		**Batch: 7110828**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	11/17/17 13:31	EPA 335.4	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/29/17 17:04

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110970 - Method Prep: Aq							**Water**					
Blank (7110970-BLK1)					Prepared: 11/22/17 11:05 Analyzed: 11/22/17 17:03							
EPA 300.0-LL												
Fluoride	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
LCS (7110970-BS1)					Prepared: 11/22/17 11:05 Analyzed: 11/22/17 17:24							
EPA 300.0-LL												
Fluoride	1.47	0.100	0.100	mg/L	1	1.50	---	98	90-110%	---	---	

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: LMC The Dalles	
7376 SW Durham Road	Project Number: 761M129557	Reported:
Portland, OR 97224	Project Manager: Christy Duitman	11/29/17 17:04

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110828 - Method Prep: Aq							Water					
Blank (7110828-BLK1)					Prepared: 11/17/17 08:13		Analyzed: 11/17/17 13:21					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7110828-BS1)					Prepared: 11/17/17 08:13		Analyzed: 11/17/17 13:23					
EPA 335.4												
Cyanide, Total	0.286	0.00500	0.00500	mg/L	1	0.250	---	114	85-115%	---	---	

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: LMC The Dalles	
7376 SW Durham Road	Project Number: 761M129557	Reported:
Portland, OR 97224	Project Manager: Christy Duitman	11/29/17 17:04

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110970							
A7K0377-01	Water	EPA 300.0-LL	11/09/17 16:00	11/22/17 11:05	10mL/10mL	10mL/10mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110828							
A7K0377-01	Water	EPA 335.4	11/09/17 16:00	11/17/17 08:13	6mL/6mL	6mL/6mL	1.00

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/29/17 17:04

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

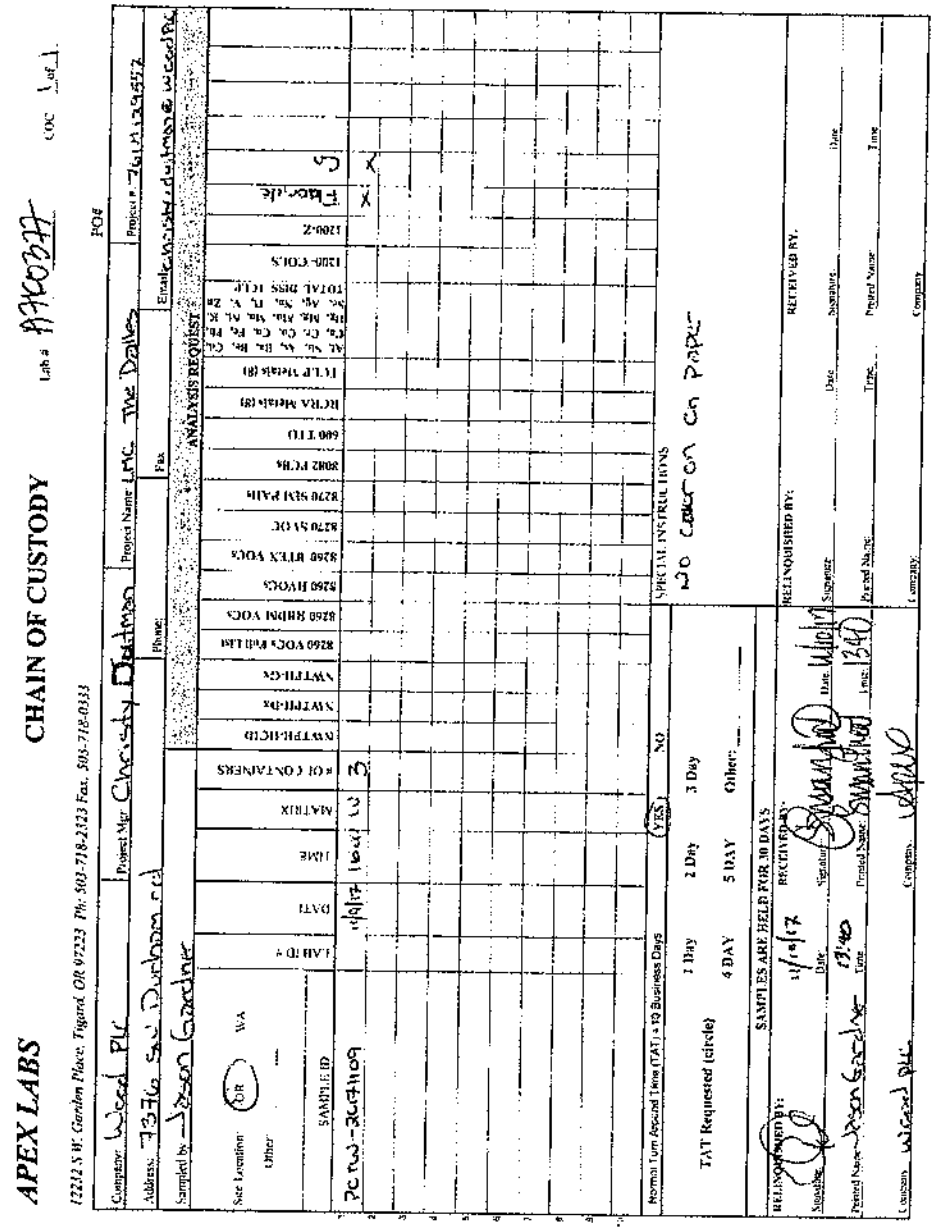
Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler 7376 SW Durham Road Portland, OR 97224	Project: **LMC The Dalles** Project Number: 761M129557 Project Manager: Christy Duitman	**Reported:** 11/29/17 17:04



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler 7376 SW Durham Road Portland, OR 97224	Project: LMC The Dalles Project Number: 761M129557 Project Manager: Christy Duitman	Reported: 11/29/17 17:04

APEX LABS COOLER RECEIPT FORM

Client: Amec Foster Wheeler Element WO#: A7 K0377

Project/Project #: LMC - The Dalles

Delivery info:

Date/Time Received: 11/10/17 @ 1340 By: [illegible]

Delivered by: Apex___ Client ✓ ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: [illegible] : 11/10/17 @ 1340

Chain of Custody Included? Yes ✓ No___ Custody Seals? Yes___ No ✓

Signed/Dated by Client? Yes ✓ No___

Signed/Dated by Apex? Yes ✓ No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	2.0						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	seal						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: AKK : 11/10/17 @ 1420

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes X No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___ NA___

Comments:

Additional Information:

Labeled by: AKK Witness: [illegible] Cooler Inspected by: AKK See Project Contact Form: Y

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lockheed Martin Corporation
Energy, Environment, Safety and Health
2550 North Hollywood Way, Suite 406 Burbank, CA 91505
Telephone: 818.847.0197 Facsimile: 818.847.0256

LOCKHEED MARTIN

January 9, 2018

Jill Hoyenga
Regulatory Compliance Manager
City of The Dalles, Dept. of Public Works
1215 West First Street
The Dalles, OR 97058

Subject: **Discharge Monitoring at the Lockheed Martin Corporation, 3313 West Second Street, The Dalles, OR 97058 Reporting Period: December 2017**

Reference: **Industrial Waste Discharge Permit No. 2016-003**

Dear Ms. Hoyenga:

Pursuant to the referenced permit, Lockheed Martin Corporation hereby submits the industrial waste discharge monitoring report for the December 2017 reporting period at the Lockheed Martin The Dalles site located at 3313 West Second Street, The Dalles, Oregon 97058.

During the month of December the system operated for 16 days and a total of 77,676 gallons of water were discharged under Permit No. 2016-003 to the City of The Dalles Publicly Owned Treatment Works. Discharged water consisted of pretreated landfill leachate, rinse water from decommissioning of the 300,000 gallon Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) aboveground tank, and/or groundwater sampling decontamination water from environmental remediation at the Site. No permit violations occurred and required analytical samples were collected.

Daily flow (total, maximum, and average) and pH data (daily maximum and minimum) are included in Table 1. Compliance monitoring laboratory analytical data are summarized in Table 2 and pre-discharge monitoring laboratory data from the CERCLA tank decommissioning are summarized in Table 3. Laboratory reports including chain of custody and quality control/quality assurance documentation are included in Attachment A.

Please call me at (303) 335-5489 or send an email to liaht.rosenstein@lmco.com if you have any questions regarding this report.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and

belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the 9th day of January, 2018 at the offices of Amec Foster Wheeler, Seattle, Washington.

Sincerely,

Liaht Rosenstein
Environmental Remediation Project Lead
Lockheed Martin Corporation

Attachments:

Table 1—Daily Flow and pH Data
Table 2—Laboratory Analytical
Table 3 – CERCLA Tank Decommissioning
Attachment A – Laboratory Analytical Reports

cc: Mr. Rick Wolf, CH2MHill

Table 1
Daily Flow and pH Data, December 2017
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Day	Daily Flow Total	Daily Flow Max	Daily Flow Average	pH Daily Min	pH Daily Max
Units	gallons per day	gallons per minute	gallons per minute	SU	SU
Permit Limit	36,000	30	30	6.0	9.0
12/1/2017	0				
12/2/2017	0				
12/3/2017	0				
12/4/2017	7,703	24.1	23.7	7.13	8.70
12/5/2017	5,882	24.1	23.6	7.34	7.62
12/6/2017	8,940	26.1	22.5	6.80	8.10
12/7/2017	5,686	25.1	23.3	6.35 (1)	6.95 (1)
12/8/2017	0				
12/9/2017	7,514	28.2	26.7	(1)	(1)
12/10/2017	0				
12/11/2017	974	23.9	23.7	7.03 (1)	7.3 (1)
12/12/2017	518	22.8	22.5	7.12 (1)	7.26 (1)
12/13/2017	5,880	24.0	23.5	(1)	(1)
12/14/2017	2,186	24.0	22.0	6.95 (1)	6.95 (1)
12/15/2017	0				
12/16/2017	0				
12/17/2017	7,357	22.0	21.7	6.87	7.09
12/18/2017	1,200	21.0	21.0	6.93	7.17
12/19/2017	0				
12/20/2017	0				
12/21/2017	0				
12/22/2017	677	22.0	21.0	6.90	7.29
12/23/2017	7,953	22.0	21.4	6.90	7.33
12/24/2017	0				
12/25/2017	0				
12/26/2017	0				
12/27/2017	2,936	22.0	21.4	7.12	7.52
12/28/2017	11,368	23.0	21.3	7.11	7.67
12/29/2017	0				
12/30/2017	0				
12/31/2017	902	22.0	22.0	7.38	7.75
Monthly Total	77,676				
Min				6.35	
Max		28.2	26.7		8.70

Notes:

1 - Automated pH controller failed on December 7, 2017. Three weekly pH measurements were recorded manually between December 7 and December 15, 2017, for compliance monitoring.

Max - Maximum
Min - Minimum
SU - Standard Units

Table 2
Laboratory Analytical Results, December 2017
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Date Sampled	Date Final Analytical Received	Sample Type	Parameter	Cyanide, Total	BOD-5	TSS	Fluoride	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
			Analytical Method	EPA 335.4	SM5210B	SM2540D	EPA 300.0	EPA 6020									
			Units	mg/L	mg/L	mg/L	mg/L	mg/L									
			Permit Limit	0.33	--	--	--	0.11	0.09	2.15	0.09	0.027	--	0.79	0.50	1.18	4.5
11/20/2017	12/7/2017	Composite	POTW-20171120	0.005 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
12/7/2017	12/26/2017	Composite	POTW-20171207	0.005 U	NT	NT	**6.81**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
12/18/2017	1/5/2018	Composite	POTW-20171218	0.005 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:
BOD-5= 5 day biological oxygen demand
Bold= Detected result
mg/L= milligrams per liter
NT= Not Tested
Pending = Sample has been submitted to the laboratory, but analytical results were unavailable at month's end.
TSS= Total suspended solids
U = The analyte was analyzed for, but was not detected above the method reporting limit. MRL has been reported.
Concentration exceeds permit limit stated in Industrial Wastewater Discharge Permit No. 2016-003.

Table 3
Laboratory Analytical Results, CERCLA Tank Decommissioning
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Date Sampled	Date Final Analytical Received	Sample Type	Parameter	Cyanide, Total	Cyanide, WAD	BOD-5	TDS	TSS	Fluoride	Sulfate	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
			Analytical Method	EPA 335.4	4500CNI	SM5210B	SM2540D	SM2540D	EPA 300.0	EPA 300.0	EPA 6020									
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L									
			Permit Limit	0.33	--	--	--	--	--	--	0.11	0.09	2.15	0.09	0.027	--	0.79	0.50	1.18	4.5
11/17/2017	11/28/2017	Composite	WASH-20171117	**0.179**	0.00500 U	16.5	327	84.0	1.10	39.1	**0.00227**	**0.00114**	**0.0144**	**0.0116**	0.00004 U	**0.00298**	**0.00377**	**0.000533**	0.0001 U	**1.300**
11/17/2017	11/28/2017	Composite	RINSE01-20171117	**0.0458**	**0.00930**	3.59	274	15.0	1.05	22.6	**0.00146**	**0.000167**	**0.00437**	**0.00227**	0.00004 U	**0.00202**	**0.00168**	0.0005 U	0.0001 U	**0.366**
11/17/2017	11/28/2017	Composite	RINSE02-20171117	**0.00610**	0.00500 U	2.58 U	290	5.00 U	**0.978**	31.2	0.0005 U	**0.0000667**	**0.00286**	**0.000822**	0.00004 U	**0.00227**	**0.00153**	0.0005 U	0.0001 U	**0.0946**
11/17/2017	11/28/2017	Composite	RINSE03-20171117	**0.0187**	**0.0118**	2.58 U	300	5.00	0.991	27.4	**0.000956**	**0.0000889**	**0.0042**	**0.00176**	0.00004 U	**0.0023**	**0.00108**	0.0005 U	0.0001 U	**0.140**

Notes:
BOD-5= 5 day biological oxygen demand
Bold= Detected result
mg/L= milligrams per liter
NT= Not Tested
TDS= Total dissolved solids
TSS= Total suspended solids
U = The analyte was analyzed for, but was not detected above the method reporting limit. MRL has been reported.
WAD = Weak Acid Dissociable
Concentration exceeds permit limit stated in Industrial Wastewater Discharge Permit No. 2016-003

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Tuesday, November 28, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 761M129557

Enclosed are the results of analyses for work order A7K0654, which was received by the laboratory on 11/17/2017 at 4:00:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Rinse01-20171117	A7K0654-01	Water	11/17/17 11:40	11/17/17 16:00
WASH-20171117	A7K0654-02	Water	11/17/17 12:00	11/17/17 16:00
WASHOILY-20171117	A7K0654-03	Water	11/17/17 12:15	11/17/17 16:00
RINSE02-20171117	A7K0654-04	Water	11/17/17 13:10	11/17/17 16:00
RINSE03-20171117	A7K0654-05	Water	11/17/17 13:45	11/17/17 16:00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Rinse01-20171117 (A7K0654-01)			**Matrix: Water**					
Batch: 7110914								
Sulfate	**22.6**	1.00	1.00	mg/L	1	11/20/17 18:31	EPA 300.0	
WASH-20171117 (A7K0654-02)			**Matrix: Water**					
Batch: 7110914								
Sulfate	**39.1**	1.00	1.00	mg/L	1	11/20/17 18:52	EPA 300.0	
WASHOILY-20171117 (A7K0654-03)			**Matrix: Water**					
Batch: 7110914								
Sulfate	**22.4**	1.00	1.00	mg/L	1	11/20/17 19:14	EPA 300.0	
RINSE02-20171117 (A7K0654-04)			**Matrix: Water**					
Batch: 7110914								
Sulfate	**31.2**	1.00	1.00	mg/L	1	11/20/17 19:35	EPA 300.0	
RINSE03-20171117 (A7K0654-05)			**Matrix: Water**					
Batch: 7110914								
Sulfate	**27.4**	1.00	1.00	mg/L	1	11/20/17 19:57	EPA 300.0	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Rinse01-20171117 (A7K0654-01)			**Matrix: Water**					
Batch: 7110970								
Fluoride	**1.05**	0.100	0.100	mg/L	1	11/22/17 19:12	EPA 300.0-LL	
WASH-20171117 (A7K0654-02)			**Matrix: Water**					
Batch: 7110970								
Fluoride	**1.10**	0.100	0.100	mg/L	1	11/22/17 19:34	EPA 300.0-LL	
WASHOILY-20171117 (A7K0654-03)			**Matrix: Water**					
Batch: 7110970								
Fluoride	**0.736**	0.100	0.100	mg/L	1	11/22/17 19:55	EPA 300.0-LL	
RINSE02-20171117 (A7K0654-04)			**Matrix: Water**					
Batch: 7110970								
Fluoride	**0.978**	0.100	0.100	mg/L	1	11/22/17 20:17	EPA 300.0-LL	
RINSE03-20171117 (A7K0654-05)			**Matrix: Water**					
Batch: 7110970								
Fluoride	**0.991**	0.100	0.100	mg/L	1	11/22/17 21:21	EPA 300.0-LL	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Rinse01-20171117 (A7K0654-01)			**Matrix: Water**		**Batch: 7110898**			
Cyanide, Total	**0.0458**	0.00500	0.00500	mg/L	1	11/20/17 13:42	EPA 335.4	
WASH-20171117 (A7K0654-02)			**Matrix: Water**		**Batch: 7110898**			
Cyanide, Total	**0.179**	0.00500	0.00500	mg/L	1	11/20/17 13:44	EPA 335.4	
WASHOILY-20171117 (A7K0654-03)			**Matrix: Water**		**Batch: 7110898**			
Cyanide, Total	**0.0360**	0.00500	0.00500	mg/L	1	11/20/17 13:46	EPA 335.4	
RINSE02-20171117 (A7K0654-04)			**Matrix: Water**		**Batch: 7110898**			
Cyanide, Total	**0.00610**	0.00500	0.00500	mg/L	1	11/20/17 13:48	EPA 335.4	
RINSE03-20171117 (A7K0654-05)			**Matrix: Water**		**Batch: 7110898**			
Cyanide, Total	**0.0187**	0.00500	0.00500	mg/L	1	11/20/17 13:50	EPA 335.4	

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7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Rinse01-20171117 (A7K0654-01)			**Matrix: Water**		**Batch: 7110897**			
Cyanide, WAD	**0.00930**	0.00500	0.00500	mg/L	1	11/20/17 12:38	SM 4500-CN (I/E)	
WASH-20171117 (A7K0654-02)			**Matrix: Water**		**Batch: 7110897**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	11/20/17 12:46	SM 4500-CN (I/E)	
WASHOILY-20171117 (A7K0654-03)			**Matrix: Water**		**Batch: 7110897**			
Cyanide, WAD	**0.0319**	0.00500	0.00500	mg/L	1	11/20/17 12:48	SM 4500-CN (I/E)	
RINSE02-20171117 (A7K0654-04)			**Matrix: Water**		**Batch: 7110897**			
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	11/20/17 12:50	SM 4500-CN (I/E)	
RINSE03-20171117 (A7K0654-05)			**Matrix: Water**		**Batch: 7110897**			
Cyanide, WAD	**0.0118**	0.00500	0.00500	mg/L	1	11/20/17 12:52	SM 4500-CN (I/E)	

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Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Rinse01-20171117 (A7K0654-01)			**Matrix: Water**					
Batch: 7110907								
Arsenic	**1.46**	0.500	1.00	ug/L	1	11/21/17 21:44	EPA 6020A	
Cadmium	**0.167**	0.0400	0.200	"	"	"	"	J
Copper	**4.37**	1.00	2.00	"	"	"	"	
Lead	**2.27**	0.100	0.200	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Molybdenum	**2.02**	0.500	1.00	"	"	"	"	
Nickel	**1.68**	0.500	1.00	"	"	"	"	
Selenium	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**366**	2.00	4.00	"	"	"	"	
WASH-20171117 (A7K0654-02)			**Matrix: Water**					
Batch: 7110907								
Arsenic	**2.27**	0.500	1.00	ug/L	1	11/21/17 21:48	EPA 6020A	
Cadmium	**1.14**	0.0400	0.200	"	"	"	"	
Copper	**14.4**	1.00	2.00	"	"	"	"	
Lead	**11.6**	0.100	0.200	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Molybdenum	**2.98**	0.500	1.00	"	"	"	"	
Nickel	**3.77**	0.500	1.00	"	"	"	"	
Selenium	**0.533**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**1300**	2.00	4.00	"	"	"	"	
WASHOILY-20171117 (A7K0654-03)			**Matrix: Water**					
Batch: 7110907								
Arsenic	ND	0.500	1.00	ug/L	1	11/21/17 21:51	EPA 6020A	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Copper	**2.29**	1.00	2.00	"	"	"	"	
Lead	**0.822**	0.100	0.200	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Molybdenum	**2.18**	0.500	1.00	"	"	"	"	
Nickel	**1.39**	0.500	1.00	"	"	"	"	
Selenium	**0.511**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**178**	2.00	4.00	"	"	"	"	

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7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RINSE02-20171117 (A7K0654-04)			**Matrix: Water**					
Batch: 7110907								
Arsenic	ND	0.500	1.00	ug/L	1	11/21/17 21:54	EPA 6020A	
Cadmium	**0.0667**	0.0400	0.200	"	"	"	"	J
Copper	**2.86**	1.00	2.00	"	"	"	"	
Lead	**0.822**	0.100	0.200	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Molybdenum	**2.27**	0.500	1.00	"	"	"	"	
Nickel	**1.53**	0.500	1.00	"	"	"	"	
Selenium	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**94.6**	2.00	4.00	"	"	"	"	
RINSE03-20171117 (A7K0654-05)			**Matrix: Water**					
Batch: 7110907								
Arsenic	**0.956**	0.500	1.00	ug/L	1	11/21/17 21:57	EPA 6020A	J
Cadmium	**0.0889**	0.0400	0.200	"	"	"	"	J
Copper	**4.20**	1.00	2.00	"	"	"	"	
Lead	**1.76**	0.100	0.200	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Molybdenum	**2.30**	0.500	1.00	"	"	"	"	
Nickel	**1.08**	0.500	1.00	"	"	"	"	
Selenium	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**140**	2.00	4.00	"	"	"	"	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Rinse01-20171117 (A7K0654-01)			**Matrix: Water**					
Batch: 7110869								
Biochemical Oxygen Demand (5 Day)	**3.59**	2.58	2.58	mg/L	1	11/22/17 19:07	SM 5210 B	
Batch: 7110929								
Total Dissolved Solids	**274**	10.0	10.0	"	"	11/22/17 18:02	SM 2540 C	
Batch: 7110962								
Total Suspended Solids	**15.0**	5.00	5.00	"	"	11/21/17 17:53	SM 2540 D	
WASH-20171117 (A7K0654-02)			**Matrix: Water**					
Batch: 7110869								
Biochemical Oxygen Demand (5 Day)	**16.5**	2.58	2.58	mg/L	1	11/22/17 19:07	SM 5210 B	
Batch: 7110929								
Total Dissolved Solids	**327**	10.0	10.0	"	"	11/22/17 18:02	SM 2540 C	
Batch: 7110962								
Total Suspended Solids	**84.0**	10.0	10.0	"	"	11/21/17 17:53	SM 2540 D	
WASHOILY-20171117 (A7K0654-03)			**Matrix: Water**					
Batch: 7110869								
Biochemical Oxygen Demand (5 Day)	**61.9**	2.58	2.58	mg/L	1	11/22/17 19:07	SM 5210 B	
Batch: 7110929								
Total Dissolved Solids	**180**	10.0	10.0	"	"	11/22/17 18:02	SM 2540 C	
Batch: 7110962								
Total Suspended Solids	**6.00**	5.00	5.00	"	"	11/21/17 17:53	SM 2540 D	
RINSE02-20171117 (A7K0654-04)			**Matrix: Water**					
Batch: 7110869								
Biochemical Oxygen Demand (5 Day)	ND	2.58	2.58	mg/L	1	11/22/17 19:07	SM 5210 B	
Batch: 7110929								
Total Dissolved Solids	**290**	10.0	10.0	"	"	11/22/17 18:02	SM 2540 C	
Batch: 7110962								
Total Suspended Solids	ND	5.00	5.00	"	"	11/21/17 17:53	SM 2540 D	
RINSE03-20171117 (A7K0654-05)			**Matrix: Water**					
Batch: 7110869								
Biochemical Oxygen Demand (5 Day)	ND	2.58	2.58	mg/L	1	11/22/17 19:07	SM 5210 B	
Batch: 7110929								
Total Dissolved Solids	**300**	10.0	10.0	"	"	11/22/17 18:02	SM 2540 C	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RINSE03-20171117 (A7K0654-05)			**Matrix: Water**					
Batch: 7110962								
Total Suspended Solids	**5.00**	5.00	5.00	mg/L	1	11/21/17 17:53	SM 2540 D	

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12232 S.W. Garden Place
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110914 - Method Prep: Aq									Water			
Blank (7110914-BLK1)					Prepared: 11/20/17 11:42		Analyzed: 11/20/17 14:12					
EPA 300.0												
Sulfate	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (7110914-BS1)					Prepared: 11/20/17 11:42		Analyzed: 11/20/17 14:34					
EPA 300.0												
Sulfate	8.19	1.00	1.00	mg/L	1	8.00	---	102	90-110%	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110970 - Method Prep: Aq									Water			
Blank (7110970-BLK1)					Prepared: 11/22/17 11:05		Analyzed: 11/22/17 17:03					
EPA 300.0-LL												
Fluoride	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
LCS (7110970-BS1)					Prepared: 11/22/17 11:05		Analyzed: 11/22/17 17:24					
EPA 300.0-LL												
Fluoride	1.47	0.100	0.100	mg/L	1	1.50	---	98	90-110%	---	---	

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7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110898 - Method Prep: Aq							**Water**					
Blank (7110898-BLK1)					Prepared: 11/20/17 09:02		Analyzed: 11/20/17 13:02					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7110898-BS1)					Prepared: 11/20/17 09:02		Analyzed: 11/20/17 13:04					
EPA 335.4												
Cyanide, Total	0.271	0.00500	0.00500	mg/L	1	0.250	---	108	85-115%	---	---	
Duplicate (7110898-DUP2)					Prepared: 11/20/17 09:02		Analyzed: 11/20/17 13:52					
QC Source Sample: RINSE03-20171117 (A7K0654-05)												
EPA 335.4												
Cyanide, Total	**0.0181**	0.00500	0.00500	mg/L	1	---	0.0187	---	---	3	10%	
Matrix Spike (7110898-MS2)					Prepared: 11/20/17 09:02		Analyzed: 11/20/17 13:54					
QC Source Sample: RINSE03-20171117 (A7K0654-05)												
EPA 335.4												
Cyanide, Total	0.281	0.00500	0.00500	mg/L	1	0.250	0.0187	105	80-120%	---	---	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110897 - Method Prep: Aq									Water			
Blank (7110897-BLK1)					Prepared: 11/20/17 08:59		Analyzed: 11/20/17 12:20					
SM 4500-CN (I/E)												
Cyanide, WAD	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7110897-BS1)					Prepared: 11/20/17 08:59		Analyzed: 11/20/17 12:22					
SM 4500-CN (I/E)												
Cyanide, WAD	0.222	0.00500	0.00500	mg/L	1	0.250	---	89	85-115%	---	---	

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7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110907 - EPA 3015A									Water			
Blank (7110907-BLK1)					Prepared: 11/20/17 10:00 Analyzed: 11/22/17 15:54							
EPA 6020A												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (7110907-BS1)					Prepared: 11/20/17 10:00 Analyzed: 11/21/17 20:24							
EPA 6020A												
Arsenic	55.4	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Cadmium	55.1	0.0400	0.200	"	"	"	---	99	"	---	---	
Copper	55.4	1.00	2.00	"	"	"	---	100	"	---	---	
Lead	55.2	0.100	0.200	"	"	"	---	99	"	---	---	
Mercury	1.06	0.0400	0.0800	"	"	1.11	---	96	"	---	---	
Molybdenum	27.7	0.500	1.00	"	"	27.8	---	100	"	---	---	
Nickel	55.7	0.500	1.00	"	"	55.6	---	100	"	---	---	
Selenium	27.3	0.500	1.00	"	"	27.8	---	98	"	---	---	
Silver	27.7	0.100	0.200	"	"	"	---	100	"	---	---	
Zinc	55.4	2.00	4.00	"	"	55.6	---	100	"	---	---	
Matrix Spike (7110907-MS2)					Prepared: 11/20/17 10:00 Analyzed: 11/21/17 22:01							
QC Source Sample: RINSE03-20171117 (A7K0654-05)												
EPA 6020A												
Arsenic	56.1	0.500	1.00	ug/L	1	55.6	0.956	99	75-125%	---	---	
Cadmium	58.3	0.0400	0.200	"	"	"	0.0889	105	"	---	---	
Copper	58.8	1.00	2.00	"	"	"	4.20	98	"	---	---	
Lead	56.5	0.100	0.200	"	"	"	1.76	98	"	---	---	
Mercury	1.08	0.0400	0.0800	"	"	1.11	ND	97	"	---	---	
Molybdenum	32.0	0.500	1.00	"	"	27.8	2.30	107	"	---	---	
Nickel	54.6	0.500	1.00	"	"	55.6	1.08	96	"	---	---	
Selenium	26.9	0.500	1.00	"	"	27.8	ND	97	"	---	---	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110907 - EPA 3015A									**Water**			
Matrix Spike (7110907-MS2)					Prepared: 11/20/17 10:00 Analyzed: 11/21/17 22:01							
QC Source Sample: RINSE03-20171117 (A7K0654-05)												
EPA 6020A												
Silver	28.3	0.100	0.200	ug/L	"	"	ND	102	"	---	---	
Zinc	197	2.00	4.00	"	"	55.6	140	104	"	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110869 - Method Prep: Aq									**Water**			
Blank (7110869-BLK1)					Prepared: 11/17/17 20:50		Analyzed: 11/22/17 19:07					
SM 5210 B												
Biochemical Oxygen Demand (5 Day)	ND	4.00	4.00	mg/L	1	---	---	---	---	---	---	
Duplicate (7110869-DUP2)					Prepared: 11/17/17 20:50		Analyzed: 11/22/17 19:07					
QC Source Sample: RINSE03-20171117 (A7K0654-05)												
SM 5210 B												
Biochemical Oxygen Demand (5 Day)	ND	2.58	2.58	mg/L	1	---	ND	---	---	---	20%	
Reference (7110869-SRM1)					Prepared: 11/17/17 20:50		Analyzed: 11/22/17 19:07					
SM 5210 B												
Biochemical Oxygen Demand (5 Day)	215			mg/L	1	198		109	84.6-115.4%	---	---	

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7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110929 - Total Dissolved Solids									Water			
Blank (7110929-BLK1)					Prepared: 11/20/17 15:06		Analyzed: 11/22/17 18:02					
SM 2540 C												
Total Dissolved Solids	ND	10.0	10.0	mg/L	1	---	---	---	---	---	---	
Reference (7110929-SRM1)					Prepared: 11/20/17 15:06		Analyzed: 11/22/17 18:02					
SM 2540 C												
Total Dissolved Solids	1010	10.0	10.0	mg/L	1	1010		100	75.1-120%	---	---	

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7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110962 - Total Suspended Solids									Water			
Blank (7110962-BLK1)					Prepared: 11/21/17 11:00		Analyzed: 11/21/17 17:53					
SM 2540 D												
Total Suspended Solids	ND	0.500	0.500	mg/L	1	---	---	---	---	---	---	
Duplicate (7110962-DUP1)					Prepared: 11/21/17 11:00		Analyzed: 11/21/17 17:53					
QC Source Sample: Rinse01-20171117 (A7K0654-01)												
SM 2540 D												
Total Suspended Solids	**12.0**	5.00	5.00	mg/L	1	---	15.0	---	---	22	10%	Q-04
Reference (7110962-SRM1)					Prepared: 11/21/17 11:00		Analyzed: 11/21/17 17:53					
SM 2540 D												
Total Suspended Solids	105			mg/L	1	100		105	77.1-110%	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110914							
A7K0654-01	Water	EPA 300.0	11/17/17 11:40	11/20/17 11:42	5mL/5mL	10mL/10mL	1.00
A7K0654-02	Water	EPA 300.0	11/17/17 12:00	11/20/17 11:42	5mL/5mL	10mL/10mL	1.00
A7K0654-03	Water	EPA 300.0	11/17/17 12:15	11/20/17 11:42	5mL/5mL	10mL/10mL	1.00
A7K0654-04	Water	EPA 300.0	11/17/17 13:10	11/20/17 11:42	5mL/5mL	10mL/10mL	1.00
A7K0654-05	Water	EPA 300.0	11/17/17 13:45	11/20/17 11:42	5mL/5mL	10mL/10mL	1.00

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110970							
A7K0654-01	Water	EPA 300.0-LL	11/17/17 11:40	11/22/17 11:05	10mL/10mL	10mL/10mL	1.00
A7K0654-02	Water	EPA 300.0-LL	11/17/17 12:00	11/22/17 11:05	10mL/10mL	10mL/10mL	1.00
A7K0654-03	Water	EPA 300.0-LL	11/17/17 12:15	11/22/17 11:05	10mL/10mL	10mL/10mL	1.00
A7K0654-04	Water	EPA 300.0-LL	11/17/17 13:10	11/22/17 11:05	10mL/10mL	10mL/10mL	1.00
A7K0654-05	Water	EPA 300.0-LL	11/17/17 13:45	11/22/17 11:05	10mL/10mL	10mL/10mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110898							
A7K0654-01	Water	EPA 335.4	11/17/17 11:40	11/20/17 09:02	6mL/6mL	6mL/6mL	1.00
A7K0654-02	Water	EPA 335.4	11/17/17 12:00	11/20/17 09:02	6mL/6mL	6mL/6mL	1.00
A7K0654-03	Water	EPA 335.4	11/17/17 12:15	11/20/17 09:02	6mL/6mL	6mL/6mL	1.00
A7K0654-04	Water	EPA 335.4	11/17/17 13:10	11/20/17 09:02	6mL/6mL	6mL/6mL	1.00
A7K0654-05	Water	EPA 335.4	11/17/17 13:45	11/20/17 09:02	6mL/6mL	6mL/6mL	1.00

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110897							
A7K0654-01	Water	SM 4500-CN (I/E)	11/17/17 11:40	11/20/17 08:59	6mL/6mL	6mL/6mL	1.00
A7K0654-02	Water	SM 4500-CN (I/E)	11/17/17 12:00	11/20/17 08:59	6mL/6mL	6mL/6mL	1.00

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7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

SAMPLE PREPARATION INFORMATION

Cyanide - Weak Acid Dissociable (WAD) (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A7K0654-03	Water	SM 4500-CN (I/E)	11/17/17 12:15	11/20/17 08:59	6mL/6mL	6mL/6mL	1.00
A7K0654-04	Water	SM 4500-CN (I/E)	11/17/17 13:10	11/20/17 08:59	6mL/6mL	6mL/6mL	1.00
A7K0654-05	Water	SM 4500-CN (I/E)	11/17/17 13:45	11/20/17 08:59	6mL/6mL	6mL/6mL	1.00

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110907							
A7K0654-01	Water	EPA 6020A	11/17/17 11:40	11/20/17 10:00	45mL/50mL	45mL/50mL	1.00
A7K0654-02	Water	EPA 6020A	11/17/17 12:00	11/20/17 10:00	45mL/50mL	45mL/50mL	1.00
A7K0654-03	Water	EPA 6020A	11/17/17 12:15	11/20/17 10:00	45mL/50mL	45mL/50mL	1.00
A7K0654-04	Water	EPA 6020A	11/17/17 13:10	11/20/17 10:00	45mL/50mL	45mL/50mL	1.00
A7K0654-05	Water	EPA 6020A	11/17/17 13:45	11/20/17 10:00	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110869							
A7K0654-01	Water	SM 5210 B	11/17/17 11:40	11/17/17 20:50	150mL/300mL	150mL/300mL	NA
A7K0654-02	Water	SM 5210 B	11/17/17 12:00	11/17/17 20:50	150mL/300mL	150mL/300mL	NA
A7K0654-03	Water	SM 5210 B	11/17/17 12:15	11/17/17 20:50	150mL/300mL	150mL/300mL	NA
A7K0654-04	Water	SM 5210 B	11/17/17 13:10	11/17/17 20:50	150mL/300mL	150mL/300mL	NA
A7K0654-05	Water	SM 5210 B	11/17/17 13:45	11/17/17 20:50	150mL/300mL	150mL/300mL	NA

Prep: Total Dissolved Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110929							
A7K0654-01	Water	SM 2540 C	11/17/17 11:40	11/20/17 15:06	1N/A/1N/A	1N/A/1N/A	NA
A7K0654-02	Water	SM 2540 C	11/17/17 12:00	11/20/17 15:06	1N/A/1N/A	1N/A/1N/A	NA
A7K0654-03	Water	SM 2540 C	11/17/17 12:15	11/20/17 15:06	1N/A/1N/A	1N/A/1N/A	NA
A7K0654-04	Water	SM 2540 C	11/17/17 13:10	11/20/17 15:06	1N/A/1N/A	1N/A/1N/A	NA
A7K0654-05	Water	SM 2540 C	11/17/17 13:45	11/20/17 15:06	1N/A/1N/A	1N/A/1N/A	NA

Prep: Total Suspended Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Prep: Total Suspended Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110962							
A7K0654-01	Water	SM 2540 D	11/17/17 11:40	11/21/17 11:00	1N/A/1N/A	1N/A/1N/A	NA
A7K0654-02	Water	SM 2540 D	11/17/17 12:00	11/21/17 11:00	1N/A/1N/A	1N/A/1N/A	NA
A7K0654-03	Water	SM 2540 D	11/17/17 12:15	11/21/17 11:00	1N/A/1N/A	1N/A/1N/A	NA
A7K0654-04	Water	SM 2540 D	11/17/17 13:10	11/21/17 11:00	1N/A/1N/A	1N/A/1N/A	NA
A7K0654-05	Water	SM 2540 D	11/17/17 13:45	11/21/17 11:00	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

Notes and Definitions

Qualifiers:

J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

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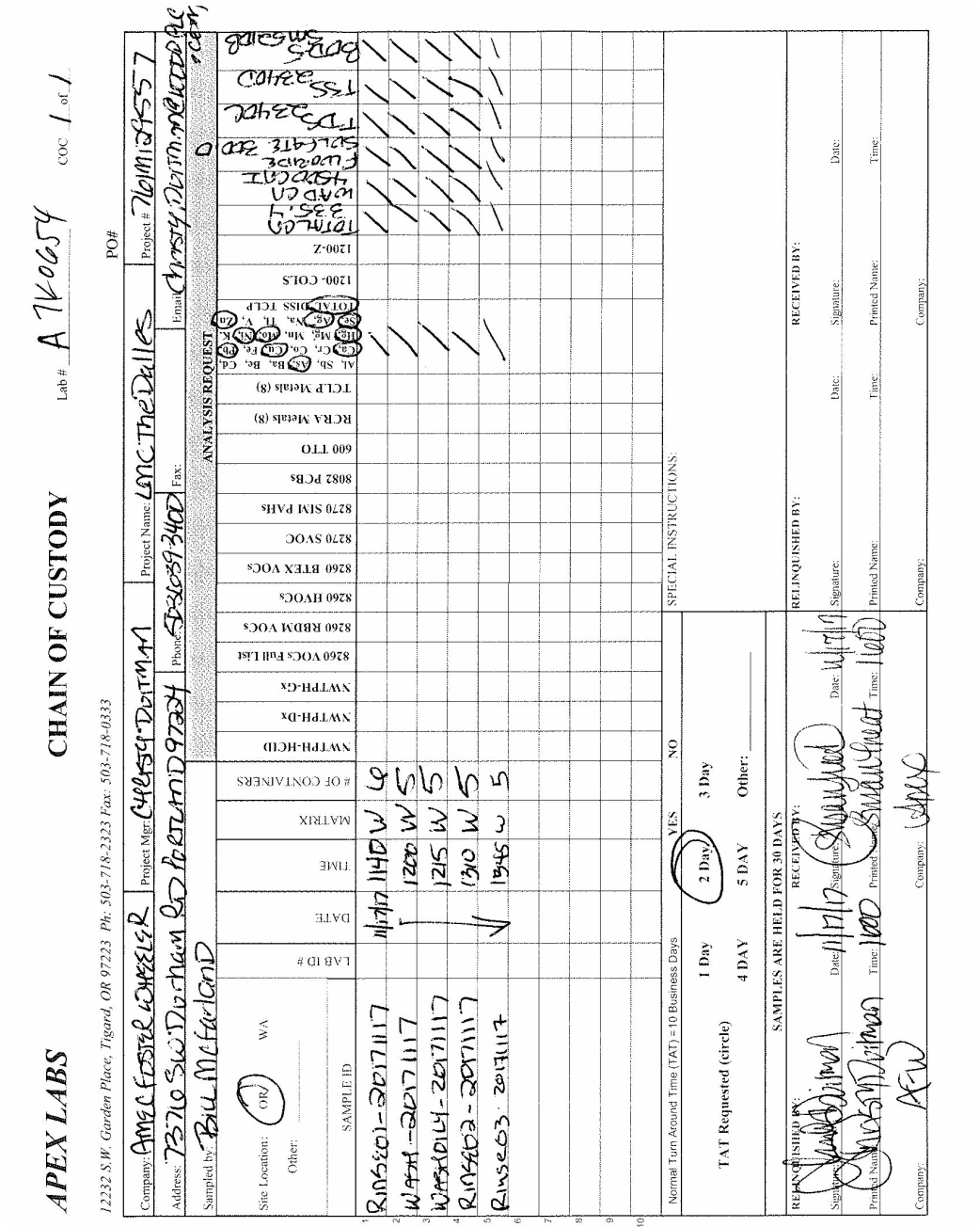
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 761M129557	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	11/28/17 13:49

APEX LABS COOLER RECEIPT FORM

Client: Amec FW _____ Element WO#: A7 K0654

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 11/17/17 @ 1600 By: (8)

Delivered by: Apex___ Client ✓ ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other_____

Cooler Inspection Inspected by: (8) : 11/17/17 @ 1600

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes_____ No ✓

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)		0.3					
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	5.3						
Ice Type: (Gel/Real/Other)							
Condition:							

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, was green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: _____ : 11/17/17 @ 1700

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes X No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No ___ NA ___

Comments:

Additional Information:

Labeled by: _____ Witness: _____ Cooler Inspected by: _____ See Project Contact Form: Y

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

Thursday, December 7, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.0003

Enclosed are the results of analyses for work order A7K0820, which was received by the laboratory on 11/21/2017 at 3:45:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Labs

12232 S.W. Garden Place
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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.0003	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/07/17 08:50

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20171120	A7K0820-01	Water	11/20/17 16:30	11/21/17 15:45

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.0003	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/07/17 08:50

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20171120 (A7K0820-01)			**Matrix: Water**		**Batch: 7111204**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	12/01/17 12:11	EPA 335.4	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.0003	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/07/17 08:50

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111204 - Method Prep: Aq									Water			
Blank (7111204-BLK1)					Prepared: 12/01/17 08:02		Analyzed: 12/01/17 12:07					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7111204-BS1)					Prepared: 12/01/17 08:02		Analyzed: 12/01/17 12:09					
EPA 335.4												
Cyanide, Total	0.254	0.00500	0.00500	mg/L	1	0.250	---	101	85-115%	---	---	
Duplicate (7111204-DUP1)					Prepared: 12/01/17 08:02		Analyzed: 12/01/17 12:13					
QC Source Sample: POTW-20171120 (A7K0820-01)												
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (7111204-MS1)					Prepared: 12/01/17 08:02		Analyzed: 12/01/17 12:15					
QC Source Sample: POTW-20171120 (A7K0820-01)												
EPA 335.4												
Cyanide, Total	0.265	0.00500	0.00500	mg/L	1	0.250	ND	106	80-120%	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.0003	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/07/17 08:50

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7111204							
A7K0820-01	Water	EPA 335.4	11/20/17 16:30	12/01/17 08:02	6mL/6mL	6mL/6mL	1.00

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.0003	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/07/17 08:50

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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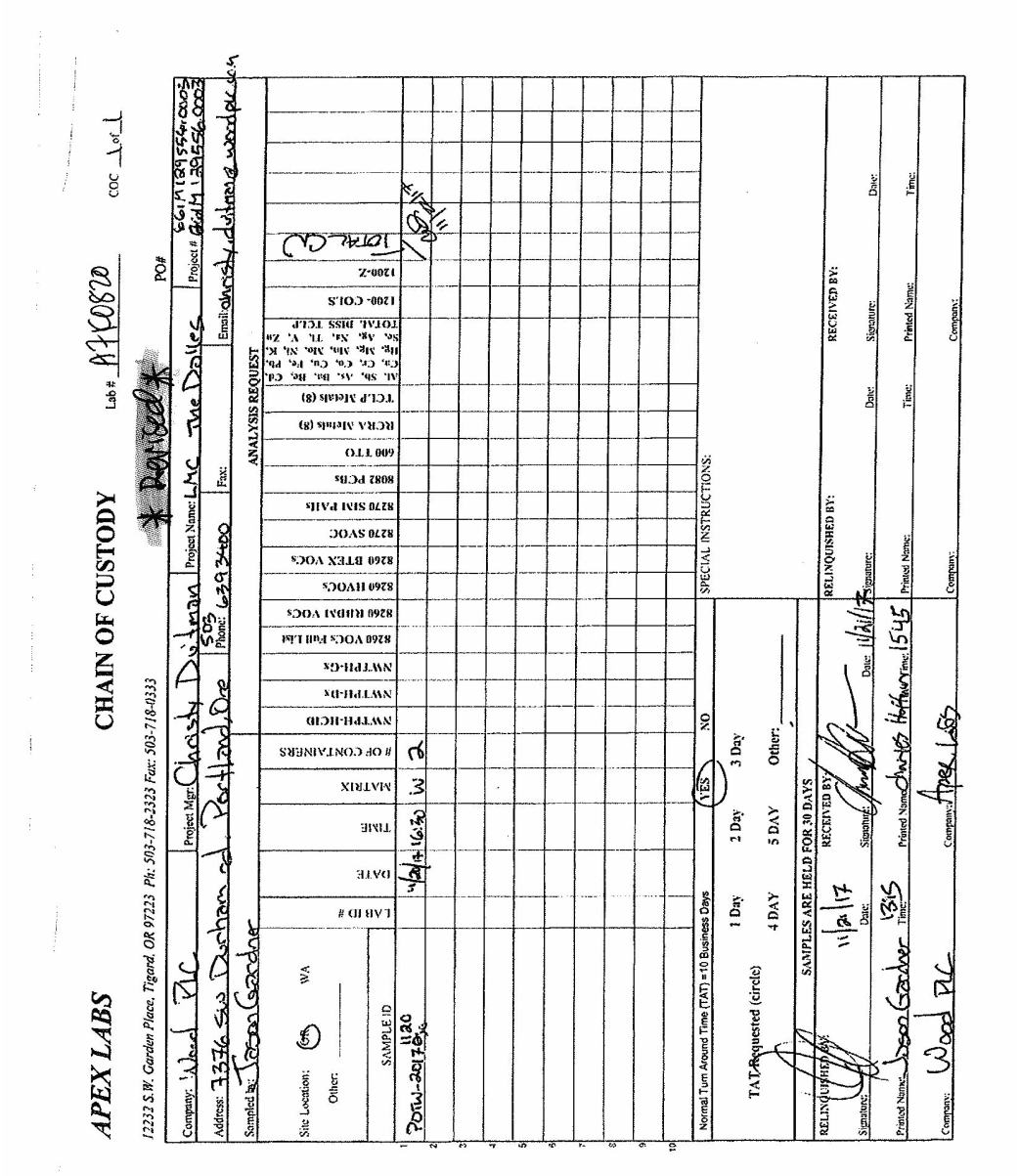
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.0003	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/07/17 08:50



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.0003	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/07/17 08:50

APEX LABS COOLER RECEIPT FORM

Client: AMEC Element WO#: A7 K0820

Project/Project #: LMC The Dalles 661M129556.0003

Delivery info:

Date/Time Received: 11/21/17 @ 1545 By: CFH

Delivered by: Apex(X) Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: CFH : 11/21/17 @ 1642

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No —

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	2.1						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: AKK : 11/22/17 @ 1202

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: ___

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No ___ NA ___

Comments: ___

Additional Information: ___

Labeled by: AKK Witness: [signature] Cooler Inspected by: AKK See Project Contact Form: Y

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, December 26, 2017

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.04

Enclosed are the results of analyses for work order A7L0208, which was received by the laboratory on 12/8/2017 at 9:50:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20171207	A7L0208-01	Water	12/07/17 10:00	12/08/17 09:50

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20171207 (A7L0208-01)			**Matrix: Water**					
Batch: 7120795								
Fluoride	**6.81**	0.100	0.100	mg/L	1	12/16/17 11:24	EPA 300.0-LL	

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20171207 (A7L0208-01)			**Matrix: Water**		**Batch: 7120851**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	12/20/17 10:58	EPA 335.4	

Apex Laboratories



Philip Nerenberg, Lab Director

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120795 - Method Prep: Aq							**Water**					
Blank (7120795-BLK1)					Prepared: 12/15/17 17:25		Analyzed: 12/16/17 10:20					
EPA 300.0-LL												
Fluoride	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
LCS (7120795-BS1)					Prepared: 12/15/17 17:25		Analyzed: 12/16/17 10:41					
EPA 300.0-LL												
Fluoride	1.51	0.100	0.100	mg/L	1	1.50	---	101	90-110%	---	---	
Duplicate (7120795-DUP1)					Prepared: 12/15/17 17:25		Analyzed: 12/16/17 11:46					
QC Source Sample: POTW-20171207 (A7L0208-01)												
EPA 300.0-LL												
Fluoride	**6.82**	0.100	0.100	mg/L	1	---	6.81	---	---	0.1	15%	
Matrix Spike (7120795-MS1)					Prepared: 12/15/17 17:25		Analyzed: 12/16/17 12:07					
QC Source Sample: POTW-20171207 (A7L0208-01)												
EPA 300.0-LL												
Fluoride	8.52	0.104	0.104	mg/L	1	1.56	6.81	110	80-120%	---	---	

Apex Labs

12232 S.W. Garden Place
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120851 - Method Prep: Aq									Water			
Blank (7120851-BLK1)					Prepared: 12/19/17 09:17		Analyzed: 12/20/17 10:54					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7120851-BS1)					Prepared: 12/19/17 09:17		Analyzed: 12/20/17 10:56					
EPA 335.4												
Cyanide, Total	0.265	0.00500	0.00500	mg/L	1	0.250	---	106	85-115%	---	---	
Duplicate (7120851-DUP5)					Prepared: 12/19/17 09:17		Analyzed: 12/20/17 14:02					
QC Source Sample: POTW-20171207 (A7L0208-01)												
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (7120851-MS1)					Prepared: 12/19/17 09:17		Analyzed: 12/20/17 11:02					
QC Source Sample: POTW-20171207 (A7L0208-01)												
EPA 335.4												
Cyanide, Total	0.230	0.00500	0.00500	mg/L	1	0.250	ND	92	80-120%	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120795							
A7L0208-01	Water	EPA 300.0-LL	12/07/17 10:00	12/15/17 17:25	5mL/5mL	5mL/5mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120851							
A7L0208-01	Water	EPA 335.4	12/07/17 10:00	12/19/17 09:17	6mL/6mL	6mL/6mL	1.00

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

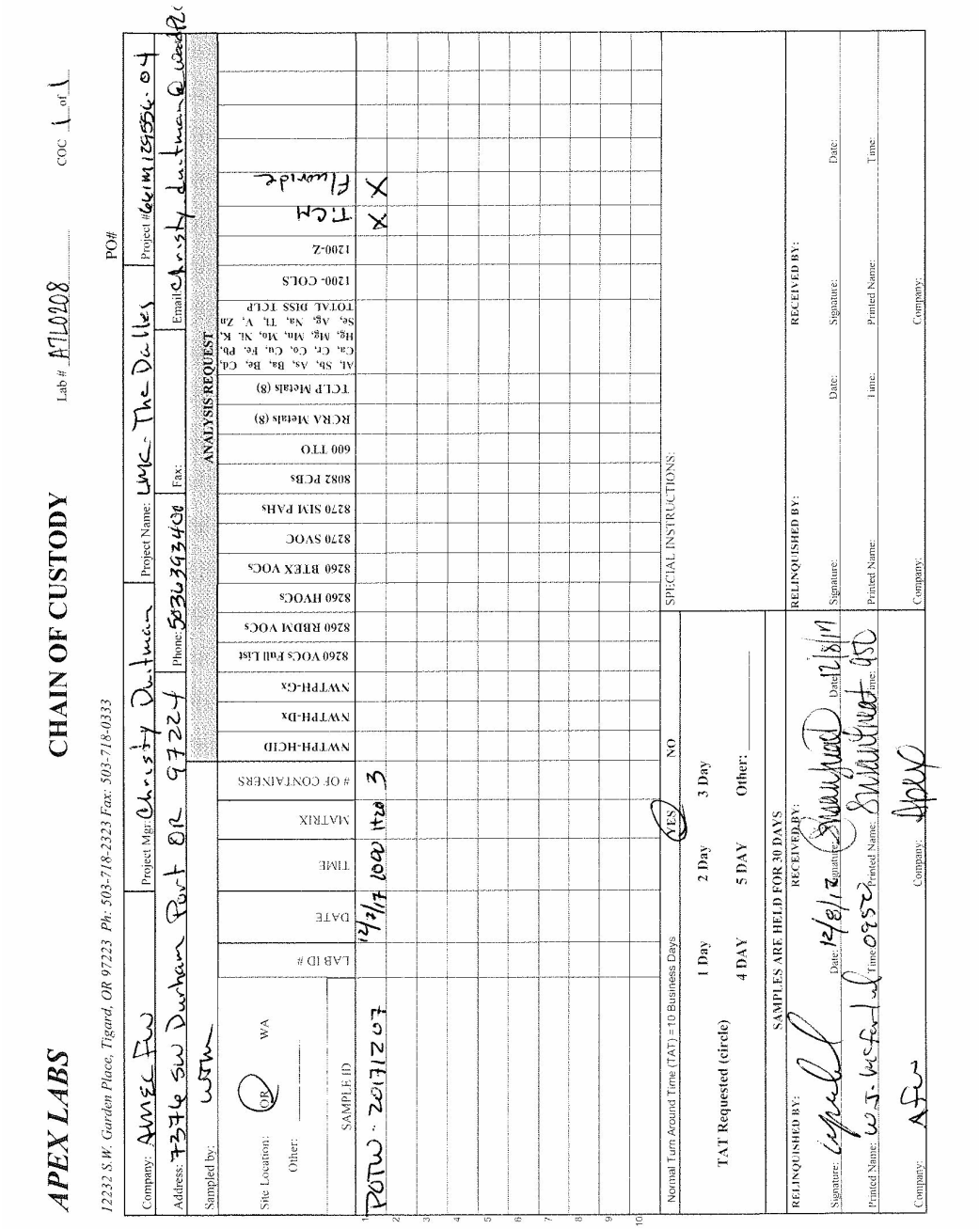
Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02



Apex Laboratories

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	12/26/17 15:02

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A7 L0208

Project/Project #: LMC-The Dalles

Delivery info:

Date/Time Received: 12/8/17 @ 950 By: ST

Delivered by: Apex___Client_X_ESS___FedEx___UPS___Swift___Senvoy___SDS___Other_____

Cooler Inspection Inspected by: ___ : 12/8/17 @ _____

Chain of Custody Included? Yes X No ___ Custody Seals? Yes_____ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.3						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: _____

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: ___ : 12/8/17 @ 1005

All Samples Intact? Yes ✓ No ___ Comments: _____

Bottle Labels/COCs agree? Yes ✓ No ___ Comments: _____

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA ✓

Comments _____

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No ___ NA _____

Comments: _____

Additional Information: _____

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, January 5, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.04

Enclosed are the results of analyses for work order A7L0521, which was received by the laboratory on 12/19/2017 at 9:35:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.



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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:50

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20171218	A7L0521-01	Water	12/18/17 13:45	12/19/17 09:35

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:50

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20171218 (A7L0521-01)			**Matrix: Water**		**Batch: 7121023**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	12/26/17 12:52	EPA 335.4	

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:50

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7121023 - Method Prep: Aq									Water			
Blank (7121023-BLK1)					Prepared: 12/26/17 10:23		Analyzed: 12/26/17 12:34					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (7121023-BS1)					Prepared: 12/26/17 10:23		Analyzed: 12/26/17 12:36					
EPA 335.4												
Cyanide, Total	0.231	0.00500	0.00500	mg/L	1	0.250	---	92	85-115%	---	---	

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:50

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7121023							
A7L0521-01	Water	EPA 335.4	12/18/17 13:45	12/26/17 10:23	6mL/6mL	6mL/6mL	1.00

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:50

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
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---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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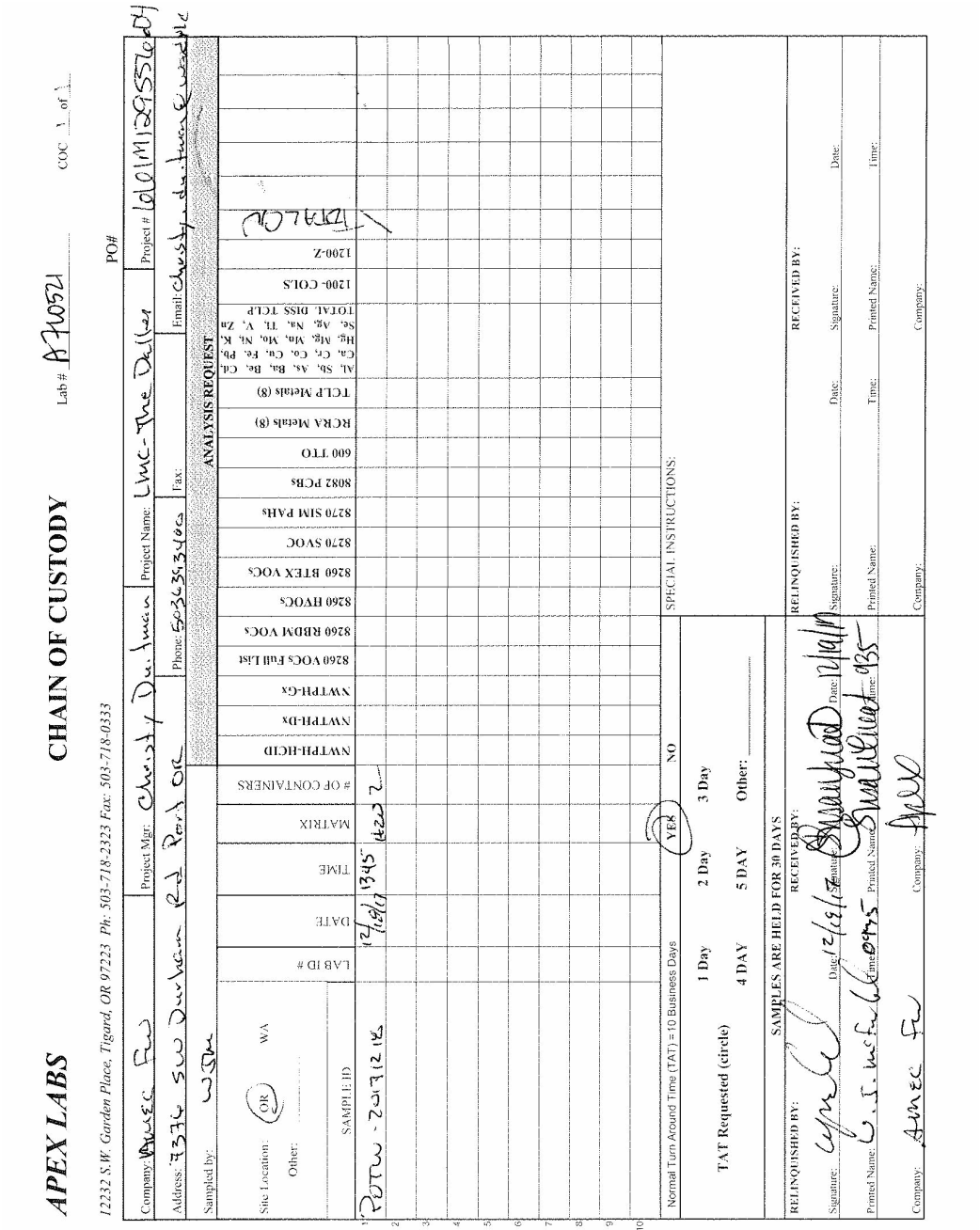
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:50



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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/05/18 16:50

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A7 10521

Project/Project #: LMC The Dalles 661M129556.04

Delivery info:

Date/Time Received: 12/19/17 @ 935 By: [illegible]

Delivered by: Apex___ Client ✓ ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: [illegible] : 12/19/17 @ 935

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes___ No ✓

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.3						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: [illegible] : 12/19/17 @ 1210

All Samples Intact? Yes ✓ No ___ Comments:

Bottle Labels/COCs agree? Yes ✓ No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA ✓

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No___ NA___

Comments:

Additional Information:

Labeled by: AKK Witness: [illegible] Cooler Inspected by: [illegible] See Project Contact Form: Y

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Lockheed Martin Corporation
Energy, Environment, Safety and Health
2550 North Hollywood Way, Suite 406 Burbank, CA 91505
Telephone: 818.847.0197 Facsimile: 818.847.0256

LOCKHEED MARTIN

February 12, 2018

Jill Hoyenga
Regulatory Compliance Manager
City of The Dalles, Dept. of Public Works
1215 West First Street
The Dalles, OR 97058

Subject: **Discharge Monitoring at the Lockheed Martin Corporation, 3313 West Second Street, The Dalles, OR 97058 Reporting Period: January 2018**

Reference: **Industrial Waste Discharge Permit No. 2016-003**

Dear Ms. Hoyenga:

Pursuant to the referenced permit, Lockheed Martin Corporation hereby submits the industrial waste discharge monitoring report for the January 2018 reporting period at the Lockheed Martin The Dalles site located at 3313 West Second Street, The Dalles, Oregon 97058.

During the month of January, the system operated for 24 days and discharged a total of 153,617 gallons of water were discharged under Permit No. 2016-003 to the City of The Dalles Publicly Owned Treatment Works. Discharged water consisted of pretreated landfill leachate, and/or groundwater sampling decontamination water from environmental remediation at the Site. No permit violations occurred and required analytical samples were collected.

Daily flow (total, maximum, and average) and pH data (daily maximum and minimum) are included in Table 1. Compliance monitoring laboratory analytical data are summarized in Table 2. Laboratory reports including chain of custody and quality control/quality assurance documentation are included in Attachment A.

Please call me at (303) 335-5489 or send an email to liaht.rosenstein@lmco.com if you have any questions regarding this report.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and

belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the 12th day of February 2018 in Denver, Colorado.

Sincerely,

Liaht Rosenstein
Environmental Remediation Project Lead
Lockheed Martin Corporation

Attachments:
Table 1—Daily Flow and pH Data
Table 2—Laboratory Analytical
Attachment A – Laboratory Analytical Reports

cc: Mr. Rick Wolf, CH2MHill

Table 1
Daily Flow and pH Data, January 2018
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Day	Daily Flow Total	Daily Flow Max	Daily Flow Average	pH Daily Min	pH Daily Max
Units	gallons per day	gallons per minute	gallons per minute	SU	SU
Permit Limit	**36,000**	**30**	**30**	**6.0**	**9.0**
1/1/2018	896	21.0	20.0	7.49	7.86
1/2/2018	897	22.0	22.0	7.46	7.85
1/3/2018	7,722	22.0	21.0	7.46	7.85
1/4/2018	14,217	22.0	21.2	7.17	7.71
1/5/2018	4,646	22.0	21.2	7.13	7.26
1/6/2018	7,623	22.0	21.0	7.05	7.29
1/7/2018	0				
1/8/2018	10,011	23.0	21.0	7.06	7.32
1/9/2018	0				
1/10/2018	6,631	22.0	21.5	7.04	7.29
1/11/2018	5,229	22.0	20.6	7.10	7.29
1/12/2018	0				
1/13/2018	11,553	22.0	21.4	6.98	7.30
1/14/2018	0				
1/15/2018	9,005	23.0	21.2	7.06	7.31
1/16/2018	3,031	23.0	21.5	7.16	7.31
1/17/2018	1,547	22.0	22.0	7.03	7.31
1/18/2018	9,025	22.0	21.5	7.03	7.32
1/19/2018	1,647	21.0	20.5	7.01	7.22
1/20/2018	8,968	22.0	21.5	7.01	7.28
1/21/2018	0				
1/22/2018	9,694	22.0	21.3	7.04	7.26
1/23/2018	0				
1/24/2018	9,483	22.0	21.0	7.05	7.26
1/25/2018	1,546	22.0	22.0	7.12	7.26
1/26/2018	2,092	22.0	20.8	7.03	7.31
1/27/2018	8,726	22.0	20.8	7.03	7.34
1/28/2018	0				
1/29/2018	12,315	23.0	21.0	7.01	7.27
1/30/2018	878	22.0	22.0	7.08	7.28
1/31/2018	6,235	22.0	21.5	7.09	7.34
Monthly Total	153,617				
Min				7.49	
Max		23.0	22.0		7.86

Notes:

Max - Maximum
Min - Minimum
SU - Standard Units

Table 2
Laboratory Analytical Results, January 2018
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Date Sampled	Date Final Analytical Received	Sample Type	Parameter	Cyanide, Total	BOD-5	TSS	Fluoride	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
			Analytical Method	EPA 335.4	SM5210B	SM2540D	EPA 300.0	EPA 6020									
			Units	mg/L	mg/L	mg/L	mg/L	mg/L									
			Permit Limit	0.33	--	--	--	0.11	0.09	2.15	0.09	0.027	--	0.79	0.50	1.18	4.5
1/5/2018	1/19/2018	Composite	POTW-20180105	0.005 U	NT	NT	**11.0**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1/15/2018	1/25/2018	Composite	POTW-20180115	0.005 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:
BOD-5= 5 day biological oxygen demand
Bold= Detected result
mg/L= milligrams per liter
NT= Not Tested
Pending = Sample has been submitted to the laboratory, but analytical results were unavailable at month's end.
TSS= Total suspended solids
U = The analyte was analyzed for, but was not detected above the method reporting limit. MRL has been reported.
Concentration exceeds permit limit stated in Industrial Wastewater Discharge Permit No. 2016-003.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, January 19, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556-04

Enclosed are the results of analyses for work order A8A0120, which was received by the laboratory on 1/5/2018 at 12:50:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20180105	A8A0120-01	Water	01/05/18 10:45	01/05/18 12:50

Apex Laboratories

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Philip Nerenberg, Lab Director

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180105 (A8A0120-01)			**Matrix: Water**					
Batch: 8010791								
Fluoride	**11.0**	0.100	0.100	mg/L	1	01/17/18 21:35	EPA 300.0-LL	

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180105 (A8A0120-01)			**Matrix: Water**		**Batch: 8010563**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	01/11/18 14:48	EPA 335.4	

Apex Laboratories

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8010791 - Method Prep: Aq									**Water**			
Blank (8010791-BLK1)					Prepared: 01/17/18 17:27		Analyzed: 01/17/18 20:52					
EPA 300.0-LL												
Fluoride	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
LCS (8010791-BS1)					Prepared: 01/17/18 17:27		Analyzed: 01/17/18 21:13					
EPA 300.0-LL												
Fluoride	1.49	0.100	0.100	mg/L	1	1.50	---	100	90-110%	---	---	
Duplicate (8010791-DUP1)					Prepared: 01/17/18 17:27		Analyzed: 01/17/18 21:56					
QC Source Sample: POTW-20180105 (A8A0120-01)												
EPA 300.0-LL												
Fluoride	**11.0**	0.100	0.100	mg/L	1	---	11.0	---	---	0.1	15%	
Matrix Spike (8010791-MS1)					Prepared: 01/17/18 17:27		Analyzed: 01/17/18 22:18					
QC Source Sample: POTW-20180105 (A8A0120-01)												
EPA 300.0-LL												
Fluoride	12.7	0.104	0.104	mg/L	1	1.56	11.0	104	80-120%	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8010563 - Method Prep: Aq									Water			
Blank (8010563-BLK1)					Prepared: 01/10/18 13:16		Analyzed: 01/11/18 14:44					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8010563-BS1)					Prepared: 01/10/18 13:16		Analyzed: 01/11/18 14:46					
EPA 335.4												
Cyanide, Total	0.253	0.00500	0.00500	mg/L	1	0.250	---	101	85-115%	---	---	
Duplicate (8010563-DUP1)					Prepared: 01/10/18 13:16		Analyzed: 01/11/18 14:56					
QC Source Sample: POTW-20180105 (A8A0120-01)												
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (8010563-MS1)					Prepared: 01/10/18 13:16		Analyzed: 01/11/18 14:58					
QC Source Sample: POTW-20180105 (A8A0120-01)												
EPA 335.4												
Cyanide, Total	0.239	0.00500	0.00500	mg/L	1	0.250	ND	96	80-120%	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8010791							
A8A0120-01	Water	EPA 300.0-LL	01/05/18 10:45	01/17/18 17:27	5mL/5mL	5mL/5mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8010563							
A8A0120-01	Water	EPA 335.4	01/05/18 10:45	01/10/18 13:16	6mL/6mL	6mL/6mL	1.00

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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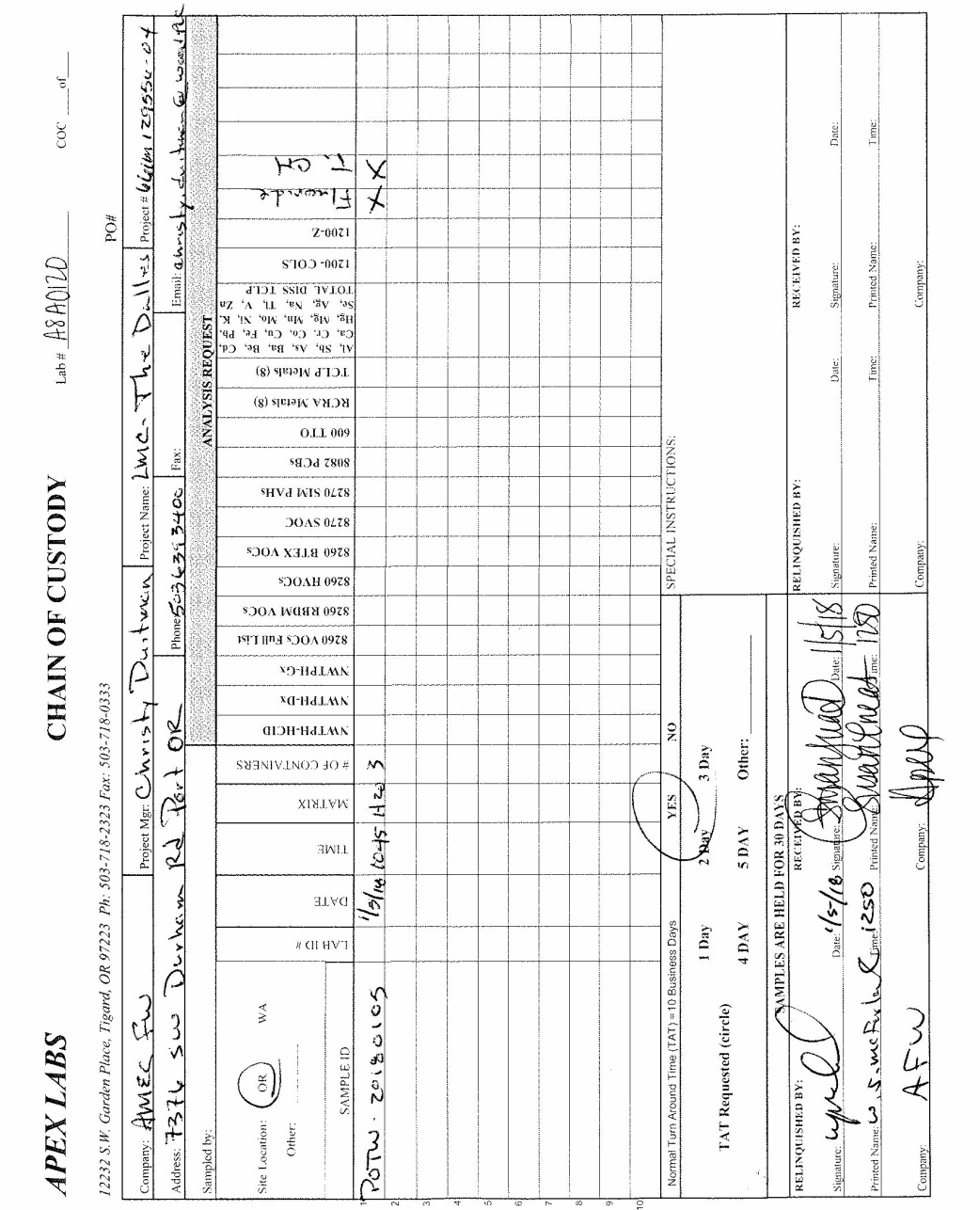
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/19/18 16:47

APEX LABS COOLER RECEIPT FORM

Client: Amec Foster Wheeler Element WO#: A8 A0120

Project/Project #: LMC - The Dalles / 661M129556-04

Delivery info:

Date/Time Received: 1/5/18 @ 1250 By: (&)

Delivered by: Apex___Client ✓ ESS___FedEx___UPS___Swift___Senvoy___SDS___Other___

Cooler Inspection Inspected by: (&) : 1/5/18 @ 1250

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes___ No ✓

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	—						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	3.6						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: (&) : 1/5/18 @ 1255

All Samples Intact? Yes ✓ No ___ Comments:

Bottle Labels/COCs agree? Yes ✓ No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA ✓

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No___ NA___

Comments:

Additional Information:

Labeled by: (&) Witness: (JM) Cooler Inspected by: (&) See Project Contact Form: Y

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, January 25, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556.04

Enclosed are the results of analyses for work order A8A0401, which was received by the laboratory on 1/15/2018 at 4:30:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:46

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20180115	A8A0401-01	Water	01/15/18 09:30	01/15/18 16:30

Apex Laboratories

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:46

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180115 (A8A0401-01)			**Matrix: Water**		**Batch: 8010727**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	01/17/18 11:06	EPA 335.4	

Apex Laboratories



Philip Nerenberg, Lab Director

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Tigard, OR 97223
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8010727 - Method Prep: Aq									Water			
Blank (8010727-BLK1)					Prepared: 01/16/18 13:09		Analyzed: 01/17/18 10:38					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8010727-BS1)					Prepared: 01/16/18 13:09		Analyzed: 01/17/18 10:40					
EPA 335.4												
Cyanide, Total	0.252	0.00500	0.00500	mg/L	1	0.250	---	101	85-115%	---	---	

Apex Laboratories



Philip Nerenberg, Lab Director

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Tigard, OR 97223
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:46

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8010727							
A8A0401-01	Water	EPA 335.4	01/15/18 09:30	01/16/18 13:09	6mL/6mL	6mL/6mL	1.00

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:46

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
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---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
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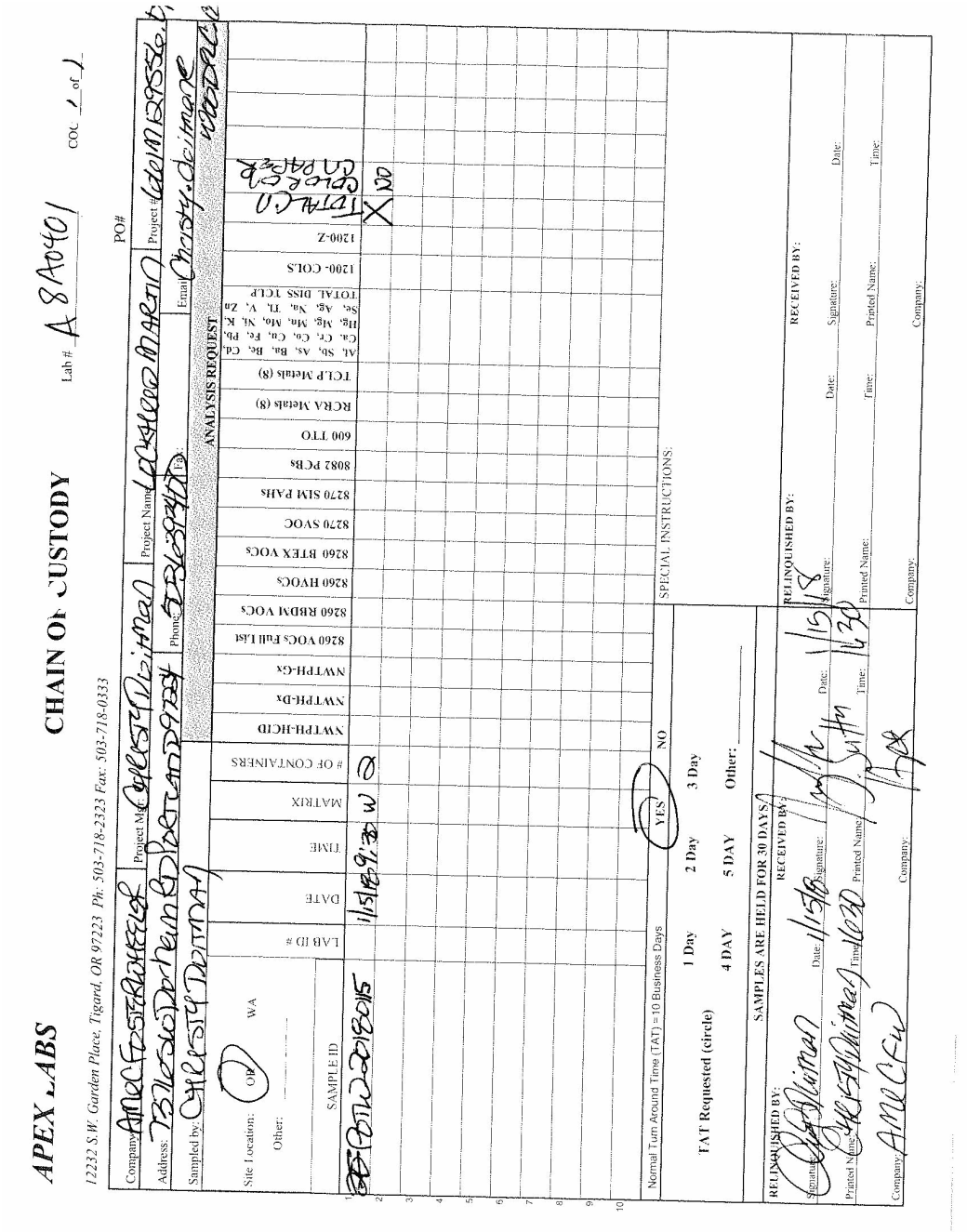
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:46



Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556.04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	01/25/18 16:46

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A8 A0401

Project/Project #: Lockheed Martin

Delivery info:

Date/Time Received: 1/15/18 @ 1630 By: JS

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: JS : 1/15/18 @ 1631

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes Y No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.8						
Received on Ice? (Y/N)	(Y)						
Temp. Blanks? (Y/N)	(Y)						
Ice Type: (Gel/Real/Other)	(Gel)						
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KM : 1/15/18 @ 1740

All Samples Intact? Yes Y No___ Comments:

Bottle Labels/COCs agree? Yes Y No___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes Y No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA Y

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes Y No___ NA___

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Lockheed Martin Corporation
Energy, Environment, Safety and Health
2550 North Hollywood Way, Suite 406 Burbank, CA 91505
Telephone: 818.847.0197 Facsimile: 818.847.0256

LOCKHEED MARTIN

March 12, 2018

Jill Hoyenga
Regulatory Compliance Manager
City of The Dalles, Dept. of Public Works
1215 West First Street
The Dalles, OR 97058

Subject: **Discharge Monitoring at the Lockheed Martin Corporation, 3313 West Second Street, The Dalles, OR 97058 Reporting Period: February 2018**

Reference: **Industrial Waste Discharge Permit No. 2016-003**

Dear Ms. Hoyenga:

Pursuant to the above referenced permit, Lockheed Martin Corporation hereby submits the industrial waste discharge monitoring report for the February 2018 reporting period at the Lockheed Martin site located at 3313 West Second Street, The Dalles, Oregon 97058.

During the month of February, the system operated for 19 days and discharged a total of 117,038 gallons of water under Permit No. 2016-003 to the City of The Dalles Publicly Owned Treatment Works. Discharged water consisted of pretreated landfill leachate, and/or groundwater sampling decontamination water from environmental remediation at the Site. No permit violations occurred during the reporting period and all required analytical samples were collected.

Daily flow (total, maximum, and average) and pH data (daily maximum and minimum) are included in Table 1. Compliance monitoring laboratory analytical data are summarized in Table 2. Laboratory reports including chain of custody and quality control/quality assurance documentation are included in Attachment A.

Please contact me at (303) 335-5489 or liaht.rosenstein@lmco.com if you have any questions regarding this report.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and

belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the 12th day of March 2018 in Denver, Colorado.

Sincerely,

Liaht Rosenstein
Environmental Remediation Project Lead
Lockheed Martin Corporation

Attachments:
Table 1—Daily Flow and pH Data
Table 2—Laboratory Analytical
Attachment A – Laboratory Analytical Reports

cc: Mr. Rick Wolf, CH2MHill

Table 1
Daily Flow and pH Data, February 2018
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Day	**Daily Flow Total**	**Daily Flow Max**	**Daily Flow Average**	**pH Daily Min**	**pH Daily Max**
Units	**gallons per day**	**gallons per minute**	**gallons per minute**	**SU**	**SU**
Permit Limit	**36,000**	**30**	**30**	**6.0**	**9.0**
2/1/2018	6,164	22.0	21.1	7.09	7.34
2/2/2018	0				
2/3/2018	12,490	22.0	21.2	7.16	7.40
2/4/2018	0				
2/5/2018	6,169	22.0	21.2	7.20	7.36
2/6/2018	4,611	23.0	20.7	7.11	7.36
2/7/2018	1,524	22.0	22.0	6.88	7.28
2/8/2018	9,192	22.0	21.3	6.88	7.29
2/9/2018	0				
2/10/2018	7,618	22.0	21.3	6.95	7.41
2/11/2018	0				
2/12/2018	8,386	22.0	21.3	6.99	7.33
2/13/2018	0				
2/14/2018	6,142	23.0	21.2	7.07	7.46
2/15/2018	1,490	23.0	21.0	7.08	7.46
2/16/2018	0				
2/17/2018	7,657	23.0	21.1	7.04	7.42
2/18/2018	0				
2/19/2018	6,313	22.0	21.1	7.09	7.46
2/20/2018	1,323	22.0	21.0	7.19	7.46
2/21/2018	3,126	22.0	20.7	7.11	7.43
2/22/2018	6,088	22.0	21.0	7.11	7.43
2/23/2018	0				
2/24/2018	10,853	23.0	21.4	7.16	7.46
2/25/2018	0				
2/26/2018	9,260	23.0	21.1	7.16	7.56
2/27/2018	4,057	23.0	21.5	7.19	7.55
2/28/2018	4,575	22.0	21.0	7.15	7.49
Monthly Total	117,038				
Min				7.20	
Max		23.0	22.0		7.56

Notes:

Max - Maximum
Min - Minimum
SU - Standard Units

Table 2
Laboratory Analytical Results, February 2018
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Date Sampled	Date Final Analytical Received	Sample Type	Parameter	Cyanide, Total	BOD-5	TSS	Fluoride	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
			Analytical Method	EPA 335.4	SM5210B	SM2540D	EPA 300.0	EPA 6020									
			Units	mg/L	mg/L	mg/L	mg/L	mg/L									
			Permit Limit	0.33	--	--	--	0.11	0.09	2.15	0.09	0.027	--	0.79	0.50	1.18	4.5
2/8/2018	2/22/2018	Composite	POTW-20180208	0.005 U	NT	NT	**10.1**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2/27/2018	3/9/2018	Composite	POTW-20180227	0.005 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:
BOD-5= 5 day biological oxygen demand
Bold= Detected result
mg/L= milligrams per liter
NT= Not Tested
Pending = Sample has been submitted to the laboratory, but analytical results were unavailable at month's end.
TSS= Total suspended solids
U = The analyte was analyzed for, but was not detected above the method reporting limit. MRL has been reported.
Concentration exceeds permit limit stated in Industrial Wastewater Discharge Permit No. 2016-003.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, February 22, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M-129556-03

Enclosed are the results of analyses for work order A8B0223, which was received by the laboratory on 2/8/2018 at 3:12:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20180208	A8B0223-01	Water	02/08/18 12:00	02/08/18 15:12

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180208 (A8B0223-01)			**Matrix: Water**					
Batch: 8020727								
Fluoride	**10.1**	---	0.100	mg/L	1	02/15/18 15:02	EPA 300.0-LL	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180208 (A8B0223-01)			**Matrix: Water**		**Batch: 8020616**			
Cyanide, Total	ND	---	0.00500	mg/L	1	02/13/18 12:44	EPA 335.4	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020727 - Method Prep: Aq									**Water**			
Blank (8020727-BLK1)					Prepared: 02/15/18 12:01		Analyzed: 02/15/18 14:19					
EPA 300.0-LL												
Fluoride	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
LCS (8020727-BS1)					Prepared: 02/15/18 12:01		Analyzed: 02/15/18 14:40					
EPA 300.0-LL												
Fluoride	1.46	---	0.100	mg/L	1	1.50	---	97	90-110%	---	---	
Duplicate (8020727-DUP1)					Prepared: 02/15/18 12:01		Analyzed: 02/15/18 15:23					
QC Source Sample: POTW-20180208 (A8B0223-01)												
EPA 300.0-LL												
Fluoride	**10.1**	---	0.100	mg/L	1	---	10.1	---	---	0.1	15%	
Matrix Spike (8020727-MS1)					Prepared: 02/15/18 12:01		Analyzed: 02/15/18 15:45					
QC Source Sample: POTW-20180208 (A8B0223-01)												
EPA 300.0-LL												
Fluoride	11.7	---	0.104	mg/L	1	1.56	10.1	103	80-120%	---	---	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020616 - Method Prep: Aq									Water			
Blank (8020616-BLK1)					Prepared: 02/13/18 08:39		Analyzed: 02/13/18 12:40					
EPA 335.4												
Cyanide, Total	ND	---	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8020616-BS1)					Prepared: 02/13/18 08:39		Analyzed: 02/13/18 12:42					
EPA 335.4												
Cyanide, Total	0.246	---	0.00500	mg/L	1	0.250	---	99	85-115%	---	---	
Duplicate (8020616-DUP1)					Prepared: 02/13/18 08:39		Analyzed: 02/13/18 12:46					
QC Source Sample: POTW-20180208 (A8B0223-01)												
EPA 335.4												
Cyanide, Total	ND	---	0.00500	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (8020616-MS1)					Prepared: 02/13/18 08:39		Analyzed: 02/13/18 12:48					
QC Source Sample: POTW-20180208 (A8B0223-01)												
EPA 335.4												
Cyanide, Total	0.235	---	0.00500	mg/L	1	0.250	ND	94	80-120%	---	---	

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020727							
A8B0223-01	Water	EPA 300.0-LL	02/08/18 12:00	02/15/18 12:01	10mL/10mL	5mL/5mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020616							
A8B0223-01	Water	EPA 335.4	02/08/18 12:00	02/13/18 08:39	6mL/6mL	6mL/6mL	1.00

Apex Laboratories

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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Philip Nerenberg, Lab Director

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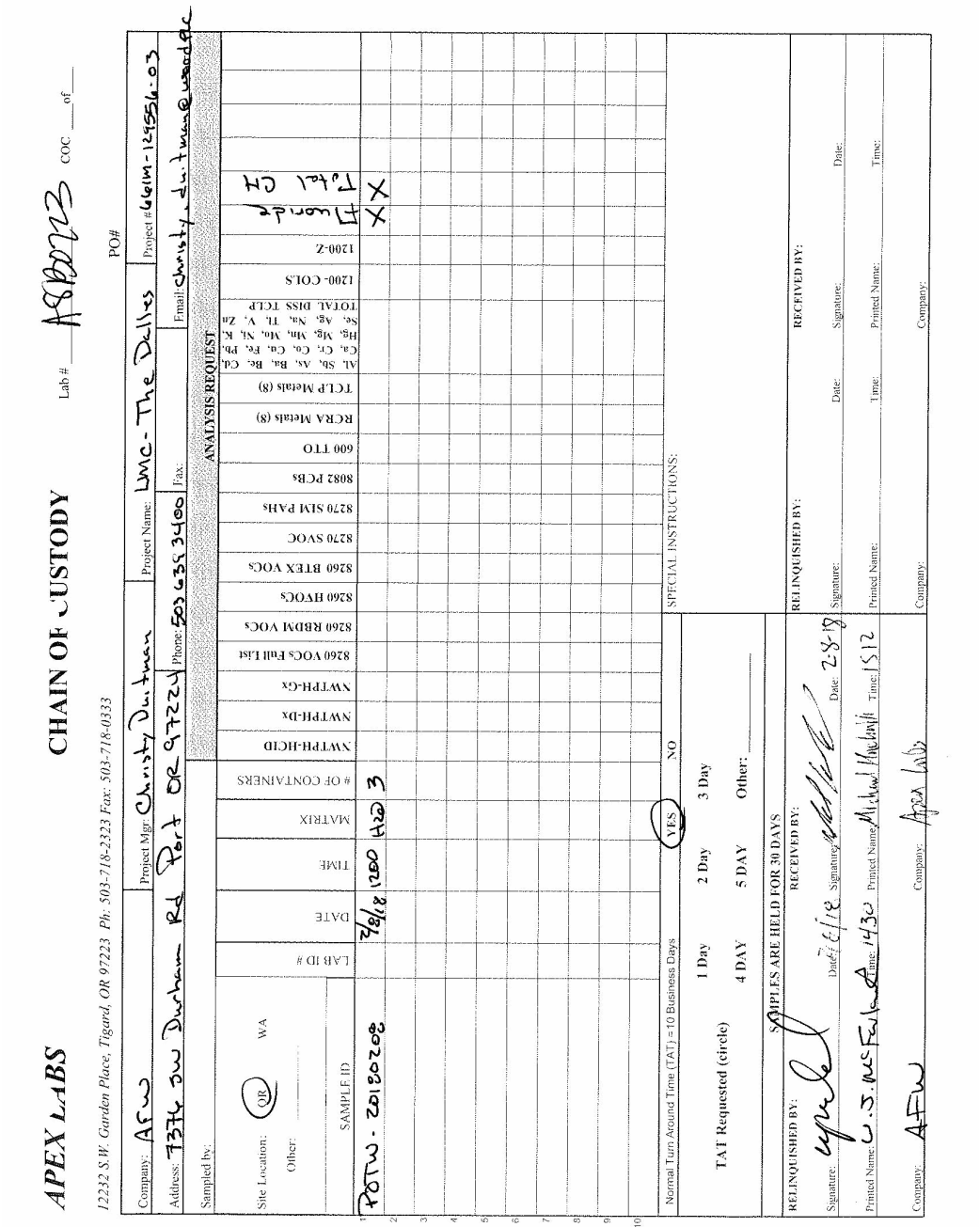
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47



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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-03	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	02/22/18 16:47

APEX LABS COOLER RECEIPT FORM

Client: AMEC FW Element WO#: A8 B0223

Project/Project #: LMC-The Dalles

Delivery info:

Date/Time Received: 2-8-18 @ 1512 By: MK

Delivered by: Apex X Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Inspected by: MK : 2-8-18 @ 1525

Chain of Custody Included? Yes X No Custody Seals? Yes No X

Signed/Dated by Client? Yes X No

Signed/Dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	~						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	3.1						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: : 2/8/18 @ 1530

All Samples Intact? Yes X No Comments:

Bottle Labels/COCs agree? Yes X No Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No Comments:

Do VOA Vials have Visible Headspace? Yes No NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No NA

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, March 9, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556-04

Enclosed are the results of analyses for work order A8B0718, which was received by the laboratory on 2/28/2018 at 1:45:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/09/18 12:11

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20180227	A8B0718-01	Water	02/27/18 14:00	02/28/18 13:45

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/09/18 12:11

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180227 (A8B0718-01)			**Matrix: Water**		**Batch: 8030351**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/01/18 12:43	EPA 335.4	

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/09/18 12:11

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030351 - Method Prep: Aq									Water			
Blank (8030351-BLK1)					Prepared: 03/01/18 09:04		Analyzed: 03/01/18 12:21					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030351-BS1)					Prepared: 03/01/18 09:04		Analyzed: 03/01/18 12:23					
EPA 335.4												
Cyanide, Total	0.256	0.00500	0.00500	mg/L	1	0.250	---	102	85-115%	---	---	

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/09/18 12:11

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030351							
A8B0718-01	Water	EPA 335.4	02/27/18 14:00	03/01/18 09:04	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/09/18 12:11

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
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Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
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---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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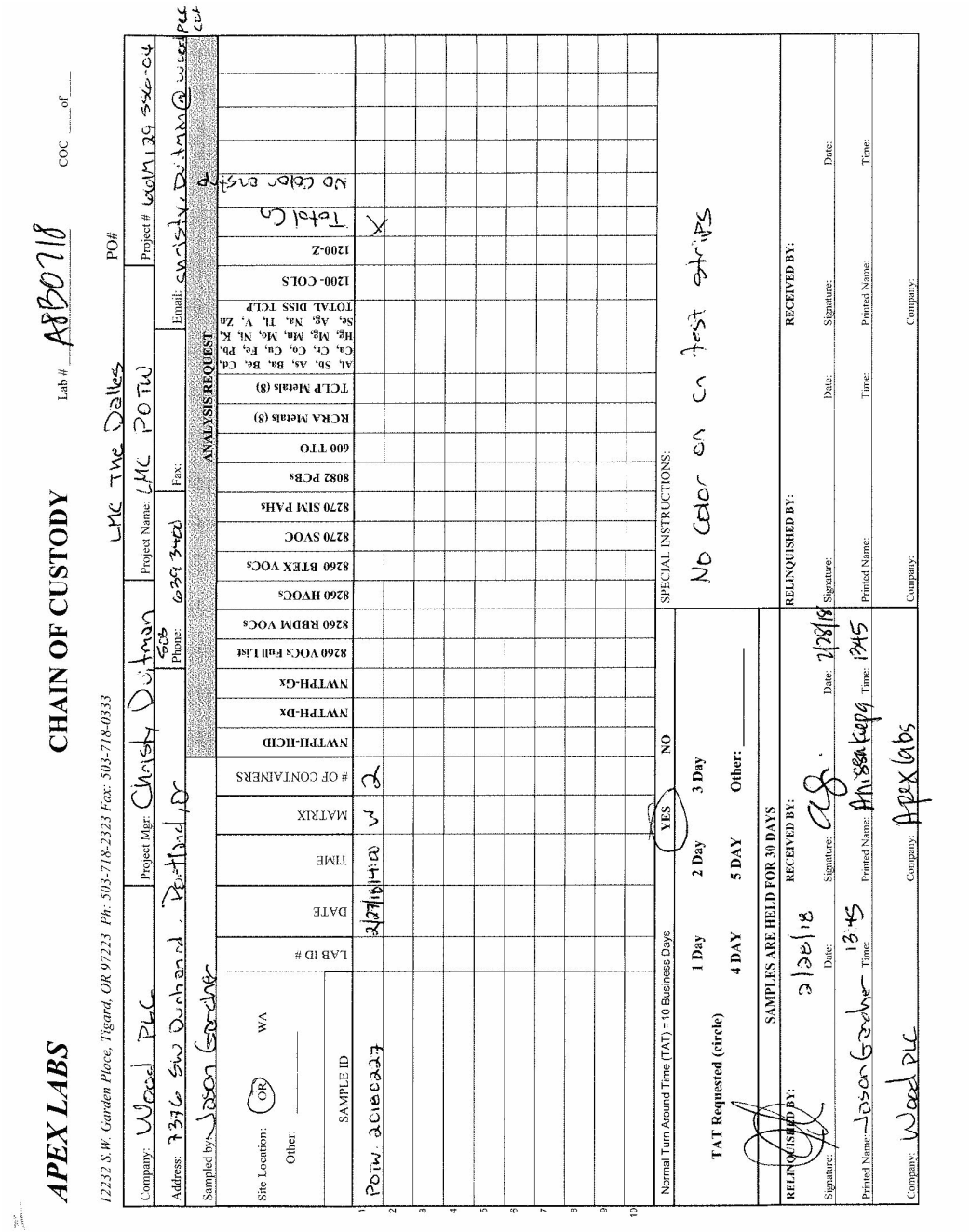
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/09/18 12:11



Apex Laboratories

Philip Nerenberg

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/09/18 12:11

APEX LABS COOLER RECEIPT FORM

Client: Amec | wood Element WO#: A8 B0718

Project/Project #: LMC The Dalles | 661M129556-04

Delivery info:

Date/Time Received: 2/28/18 @ 1345 By: AFC

Delivered by: Apex___Client X ESS___FedEx___UPS___Swift___Senvoy___SDS___Other___

Cooler Inspection Inspected by: AFC : 2/28/18 @ 1345

Chain of Custody Included? Yes X No ___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)							
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	4.9						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: AFC : 2/28/18 @ 1346

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes X No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___NA___

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

AFC

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Lockheed Martin Corporation
Energy, Environment, Safety and Health
2550 North Hollywood Way, Suite 406 Burbank, CA 91505
Telephone: 818.847.0197 Facsimile: 818.847.0256

LOCKHEED MARTIN

April 10, 2018

Jill Hoyenga
Regulatory Compliance Manager
City of The Dalles, Dept. of Public Works
1215 West First Street
The Dalles, OR 97058

Subject: **Discharge Monitoring at the Lockheed Martin Corporation, 3313 West Second Street, The Dalles, OR 97058 Reporting Period: March 2018**

Reference: **Industrial Waste Discharge Permit No. 2016-003**

Dear Ms. Hoyenga:

Pursuant to the above referenced permit, Lockheed Martin Corporation hereby submits the industrial waste discharge monitoring report for the March 2018 reporting period at the Lockheed Martin site located at 3313 West Second Street, The Dalles, Oregon 97058.

During the month of March, the system operated for 20 days and discharged a total of 118,029 gallons of water under Permit No. 2016-003 to the City of The Dalles Publicly Owned Treatment Works. Discharged water consisted of pretreated landfill leachate, and/or groundwater sampling decontamination water from environmental remediation at the Site. No permit violations occurred during the reporting period and all required analytical samples were collected.

Daily flow (total, maximum, and average) and pH data (daily maximum and minimum) are included in Table 1. Compliance monitoring laboratory analytical data are summarized in Table 2. Laboratory reports including chain of custody and quality control/quality assurance documentation are included in Attachment A.

Please contact me at (303) 335-5489 or liaht.rosenstein@lmco.com if you have any questions regarding this report.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and

belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the 10th day of March 2018 in Denver, Colorado.

Sincerely,

Liaht Rosenstein
Environmental Remediation Project Lead
Lockheed Martin Corporation

Attachments:
Table 1—Daily Flow and pH Data
Table 2—Laboratory Analytical
Attachment A – Laboratory Analytical Reports

cc: Mr. Rick Wolf, CH2MHill

Table 1
Daily Flow and pH Data, March 2018
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Day	Daily Flow Total	Daily Flow Max	Daily Flow Average	pH Daily Min	pH Daily Max
Units	gallons per day	gallons per minute	gallons per minute	SU	SU
Permit Limit	36,000	30	30	6.0	9.0
3/1/18	7,493	22.0	21.2	7.15	7.49
3/2/18	0				
3/3/18	12,233	23.0	21.2	7.03	7.49
3/4/18	1,424	23.0	20.0	7.12	7.44
3/5/18	5,365	22.0	21.1	7.08	7.52
3/6/18	6,869	21.9	20.9	7.08	7.53
3/7/18	0				
3/8/18	9,510	23.0	21.0	7.06	7.52
3/9/18	2,175	23.0	21.1	7.16	7.52
3/10/18	0				
3/11/18	9,024	22.0	21.2	7.02	7.54
3/12/18	0				
3/13/18	7,583	22.0	21.6	7.03	7.53
3/14/18	0				
3/15/18	4,609	23.0	20.9	7.11	7.55
3/16/18	3,987	23.0	21.5	7.11	7.55
3/17/18	0				
3/18/18	7,321	23.0	21.0	7.04	7.56
3/19/18	0				
3/20/18	8,519	22.0	21.4	7.06	7.55
3/21/18	0				
3/22/18	5,775	22.0	21.5	7.06	7.62
3/23/18	1,738	22.0	21.0	7.07	7.62
3/24/18	1,529	21.0	20.0	7.09	7.51
3/25/18	7,216	22.0	21.1	7.09	7.55
3/26/18	0				
3/27/18	7,356	22.0	21.1	7.08	7.65
3/28/18	0				
3/29/18	4,430	22.0	21.5	7.05	7.60
3/30/18	3,873	22.0	21.0	7.05	7.66
3/31/18	0				
Monthly Total	118,029				
Min				7.16	
Max		23.0	21.6		7.66

Notes:

Max - Maximum
Min - Minimum
SU - Standard Units

Table 2
Laboratory Analytical Results, March 2018
Industrial Waste Discharge Permit No 2016-003
Lockheed Martin Corporation
3313 West Second Street, The Dalles, OR

Date Sampled	Date Final Analytical Received	Sample Type	Parameter	Cyanide, Total	BOD-5	TSS	Fluoride	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
			Analytical Method	EPA 335.4	SM5210B	SM2540D	EPA 300.0	EPA 6020									
			Units	mg/L	mg/L	mg/L	mg/L	mg/L									
			Permit Limit	0.33	--	--	--	0.11	0.09	2.15	0.09	0.027	--	0.79	0.50	1.18	4.5
3/7/18	3/23/18	Composite	POTW-20180307	0.005 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
3/13/18	4/9/18	Composite	POTW-20180313	0.005 U	**2.54**	5.00 U	**9.96**	**0.00371**	0.000200 U	**0.0771**	**0.000195**	0.000050 U	**0.00493**	**0.000598**	**0.00116**	0.00020 U	**0.0378**
4/4/18	pending	Composite	POTW-20180404	pending	NT	NT	pending	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:
BOD-5= 5 day biological oxygen demand
Bold= Detected result
mg/L = milligrams per liter
NT = Not Tested
Pending = Sample has been submitted to the laboratory, but analytical results were unavailable at month's end.
TSS= Total suspended solids
U = The analyte was analyzed for, but was not detected above the method reporting limit. MRL has been reported.
Concentration exceeds permit limit stated in Industrial Wastewater Discharge Permit No. 2016-003.

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

Friday, March 23, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M129556

Enclosed are the results of analyses for work order A8C0287, which was received by the laboratory on 3/8/2018 at 2:18:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/23/18 16:31

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20180307	A8C0287-01	Water	03/07/18 14:00	03/08/18 14:18

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/23/18 16:31

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180307 (A8C0287-01)			**Matrix: Water**		**Batch: 8030621**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/09/18 14:20	EPA 335.4	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/23/18 16:31

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030621 - Method Prep: Aq									Water			
Blank (8030621-BLK1)					Prepared: 03/09/18 10:16		Analyzed: 03/09/18 13:42					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030621-BS1)					Prepared: 03/09/18 10:16		Analyzed: 03/09/18 13:44					
EPA 335.4												
Cyanide, Total	0.254	0.00500	0.00500	mg/L	1	0.250	---	102	85-115%	---	---	

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/23/18 16:31

SAMPLE PREPARATION INFORMATION

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030621							
A8C0287-01	Water	EPA 335.4	03/07/18 14:00	03/09/18 10:16	6mL/6mL	6mL/6mL	1.00

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/23/18 16:31

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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Philip Nerenberg, Lab Director

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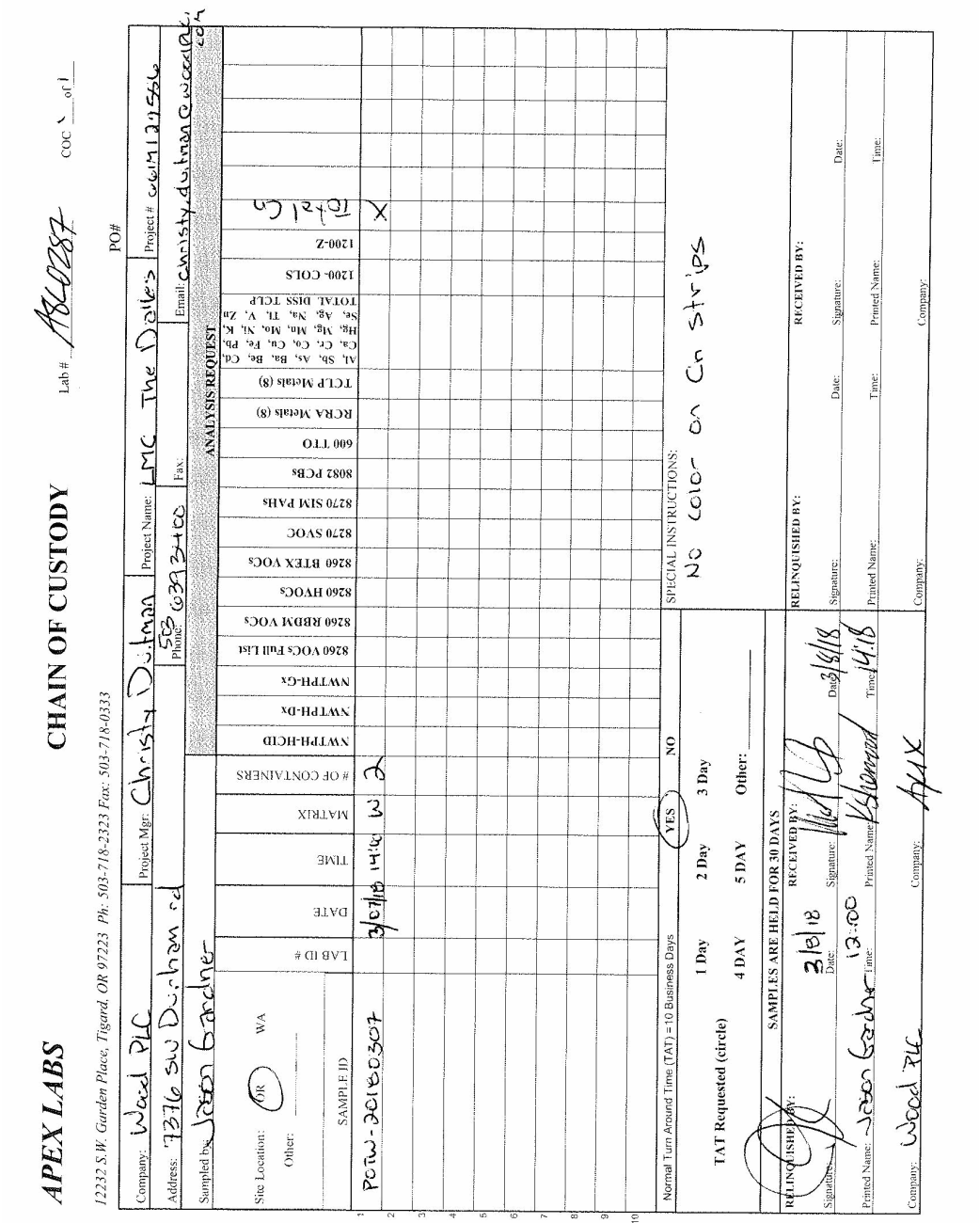
AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/23/18 16:31



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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M129556	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	03/23/18 16:31

APEX LABS COOLER RECEIPT FORM

Client: Amec Element WO#: A8 C0287

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 3/8/18 @ 14:18 By: MS

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: MS : 3/8/18 @ 14:38

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	4.3	3.3					
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	4.3		2.8				
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: MS : 3/8/18 @ 15:00

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: ___

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No ___ NA ___

Comments: ___

Additional Information: ___

Labeled by: MS Witness: DCC Cooler Inspected by: MS See Project Contact Form: Y

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

Monday, April 9, 2018

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: LMC The Dalles / 661M-129556-04

Enclosed are the results of analyses for work order A8C0502, which was received by the laboratory on 3/14/2018 at 8:45:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.



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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
POTW-20180313	A8C0502-01	Water	03/13/18 15:00	03/14/18 08:45

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180313 (A8C0502-01)			**Matrix: Water**					
Batch: 8031046								
Fluoride	**9.96**	0.100	0.100	mg/L	1	03/22/18 20:00	EPA 300.0-LL	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180313 (A8C0502-01RE1)			**Matrix: Water**		**Batch: 8030902**			
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	03/19/18 14:39	EPA 335.4	

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180313 (A8C0502-01)			**Matrix: Water**					
Batch: 8031355								
Arsenic	**0.00371**	0.000500	0.00100	mg/L	1	04/04/18 13:45	EPA 200.8	
Cadmium	ND	0.0000400	0.000200	"	"	"	"	
Copper	**0.0771**	0.000500	0.00100	"	"	"	"	
Lead	**0.000195**	0.000100	0.000200	"	"	"	"	J
Molybdenum	**0.00493**	0.000500	0.00100	"	"	"	"	
Nickel	**0.000598**	0.000500	0.00100	"	"	"	"	J
Selenium	**0.00116**	0.000500	0.00100	"	"	"	"	
Zinc	**0.0378**	0.00200	0.00400	"	"	"	"	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180313 (A8C0502-01)			**Matrix: Water**					
Batch: 8030786								
Biochemical Oxygen Demand	**2.54**	2.29	2.29	mg/L	1	03/20/18 14:48	SM 5210 B	
Batch: 8030907								
Total Suspended Solids	ND	5.00	5.00	"	"	03/19/18 17:08	SM 2540 D	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

Weck Laboratories, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
POTW-20180313 (A8C0502-01)			**Matrix: Water**		**Batch: W8C1595**			
Batch: W8C1595								
Mercury, Total	ND	---	0.000050	mg/l	1	03/28/18 17:13	EPA 245.1	
Batch: W8C1614								
Silver, Total	ND	---	0.00020	"	"	04/03/18 03:59	EPA 200.8	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031046 - Method Prep: Aq									Water			
Blank (8031046-BLK1)					Prepared: 03/22/18 11:16		Analyzed: 03/22/18 18:13					
EPA 300.0-LL												
Fluoride	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
LCS (8031046-BS1)					Prepared: 03/22/18 11:16		Analyzed: 03/22/18 18:34					
EPA 300.0-LL												
Fluoride	1.45	0.100	0.100	mg/L	1	1.50	---	96	90-110%	---	---	

Apex Laboratories



Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030902 - Method Prep: Aq									Water			
Blank (8030902-BLK2)					Prepared: 03/19/18 10:16		Analyzed: 03/19/18 14:35					
EPA 335.4												
Cyanide, Total	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (8030902-BS2)					Prepared: 03/19/18 10:16		Analyzed: 03/19/18 14:37					
EPA 335.4												
Cyanide, Total	0.262	0.00500	0.00500	mg/L	1	0.250	---	105	85-115%	---	---	

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8031355 - EPA 3015A							**Water**					
Blank (8031355-BLK1)					Prepared: 03/30/18 09:29 Analyzed: 04/04/18 12:58							
EPA 200.8												
Arsenic	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
Cadmium	ND	0.0000400	0.000200	"	"	---	---	---	---	---	---	
Copper	ND	0.000500	0.00100	"	"	---	---	---	---	---	---	
Lead	ND	0.000100	0.000200	"	"	---	---	---	---	---	---	
Molybdenum	ND	0.000500	0.00100	"	"	---	---	---	---	---	---	
Nickel	ND	0.000500	0.00100	"	"	---	---	---	---	---	---	
Selenium	ND	0.000500	0.00100	"	"	---	---	---	---	---	---	
Zinc	ND	0.00200	0.00400	"	"	---	---	---	---	---	---	
LCS (8031355-BS1)					Prepared: 03/30/18 09:29 Analyzed: 04/04/18 13:03							
EPA 200.8												
Arsenic	0.0576	0.000500	0.00100	mg/L	1	0.0556	---	104	85-115%	---	---	
Cadmium	0.0547	0.0000400	0.000200	"	"	"	---	99	"	---	---	
Copper	0.0584	0.000500	0.00100	"	"	"	---	105	"	---	---	
Lead	0.0562	0.000100	0.000200	"	"	"	---	101	"	---	---	
Molybdenum	0.0286	0.000500	0.00100	"	"	0.0278	---	103	"	---	---	
Nickel	0.0585	0.000500	0.00100	"	"	0.0556	---	105	"	---	---	
Selenium	0.0279	0.000500	0.00100	"	"	0.0278	---	100	"	---	---	
Zinc	0.0577	0.00200	0.00400	"	"	0.0556	---	104	"	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030786 - Method Prep: Aq									**Water**			
Blank (8030786-BLK1)					Prepared: 03/15/18 09:20		Analyzed: 03/20/18 14:48					
SM 5210 B												
Biochemical Oxygen Demand	ND	4.00	4.00	mg/L	1	---	---	---	---	---	---	
Reference (8030786-SRM1)					Prepared: 03/15/18 09:20		Analyzed: 03/20/18 14:48					
SM 5210 B												
Biochemical Oxygen Demand	206			mg/L	1	198		104	84.6-115.4%	---	---	

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Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030907 - Total Suspended Solids									Water			
Blank (8030907-BLK1)					Prepared: 03/19/18 14:09		Analyzed: 03/19/18 17:08					
SM 2540 D												
Total Suspended Solids	ND	5.00	5.00	mg/L	1	---	---	---	---	---	---	
Reference (8030907-SRM1)					Prepared: 03/19/18 14:09		Analyzed: 03/21/18 14:36					
SM 2540 D												
Total Suspended Solids	92.0			mg/L	1	100		92	77.1-110%	---	---	

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7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

Weck Laboratories, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Metals by EPA 200 Series Methods

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch W8C1595 - EPA 245.1							**Water**					
Blank (W8C1595-BLK1)					Prepared: 03/27/18 08:53		Analyzed: 03/28/18 16:23					
EPA 245.1												
Mercury, Total	ND	---	0.000050	mg/l	1	---	---	---	---	---	---	
LCS (W8C1595-BS1)					Prepared: 03/27/18 08:53		Analyzed: 03/28/18 16:25					
EPA 245.1												
Mercury, Total	0.00107	---	0.000050	mg/l	1	0.00100	---	107	85-115%	---	---	

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7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

Weck Laboratories, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Metals by EPA 200 Series Methods

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch W8C1614 - EPA 200.2							**Water**					
Blank (W8C1614-BLK1)					Prepared: 03/27/18 10:35		Analyzed: 04/03/18 02:44					
EPA 200.8												
Silver, Total	ND	---	0.00020	mg/l	1	---	---	---	---	---	---	
LCS (W8C1614-BS1)					Prepared: 03/27/18 10:35		Analyzed: 04/03/18 02:52					
EPA 200.8												
Silver, Total	0.0487	---	0.00020	mg/l	1	0.0500	---	97	85-115%	---	---	
Matrix Spike (W8C1614-MS1)					Prepared: 03/27/18 10:35		Analyzed: 04/03/18 02:59					
QC Source Sample: A8C0502-01 (A8C0502-01)												
EPA 200.8												
Silver, Total	0.0446	---	0.00020	mg/l	1	0.0500	ND	89	70-130%	---	---	
Matrix Spike Dup (W8C1614-MSD1)					Prepared: 03/27/18 10:35		Analyzed: 04/03/18 03:07					
QC Source Sample: A8C0502-01 (A8C0502-01)												
EPA 200.8												
Silver, Total	0.0450	---	0.00020	mg/l	1	0.0500	ND	90	70-130%	0.9	30%	

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography) - Low Level

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031046							
A8C0502-01	Water	EPA 300.0-LL	03/13/18 15:00	03/22/18 11:16	10mL/10mL	5mL/5mL	1.00

Cyanide - Total (Aqueous)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030902							
A8C0502-01RE1	Water	EPA 335.4	03/13/18 15:00	03/19/18 10:16	6mL/6mL	6mL/6mL	1.00

Total Metals by EPA 200.8 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8031355							
A8C0502-01	Water	EPA 200.8	03/13/18 15:00	03/30/18 09:29	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030786							
A8C0502-01	Water	SM 5210 B	03/13/18 15:00	03/15/18 09:20	150mL/300mL	150mL/300mL	NA

Prep: Total Suspended Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8030907							
A8C0502-01	Water	SM 2540 D	03/13/18 15:00	03/19/18 14:09	1N/A/1N/A	1N/A/1N/A	NA

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Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

Weck Laboratories, Inc.

SAMPLE PREPARATION INFORMATION

Metals by EPA 200 Series Methods

Prep: EPA 200.2					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: W8C1614							
A8C0502-01	Water	EPA 200.8	03/13/18 15:00	03/27/18 10:35	50ml/50ml	50ml/50ml	1.00

Prep: EPA 245.1					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: W8C1595							
A8C0502-01	Water	EPA 245.1	03/13/18 15:00	03/27/18 08:53	50ml/50ml	50ml/50ml	1.00

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7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

Notes and Definitions

Qualifiers:

J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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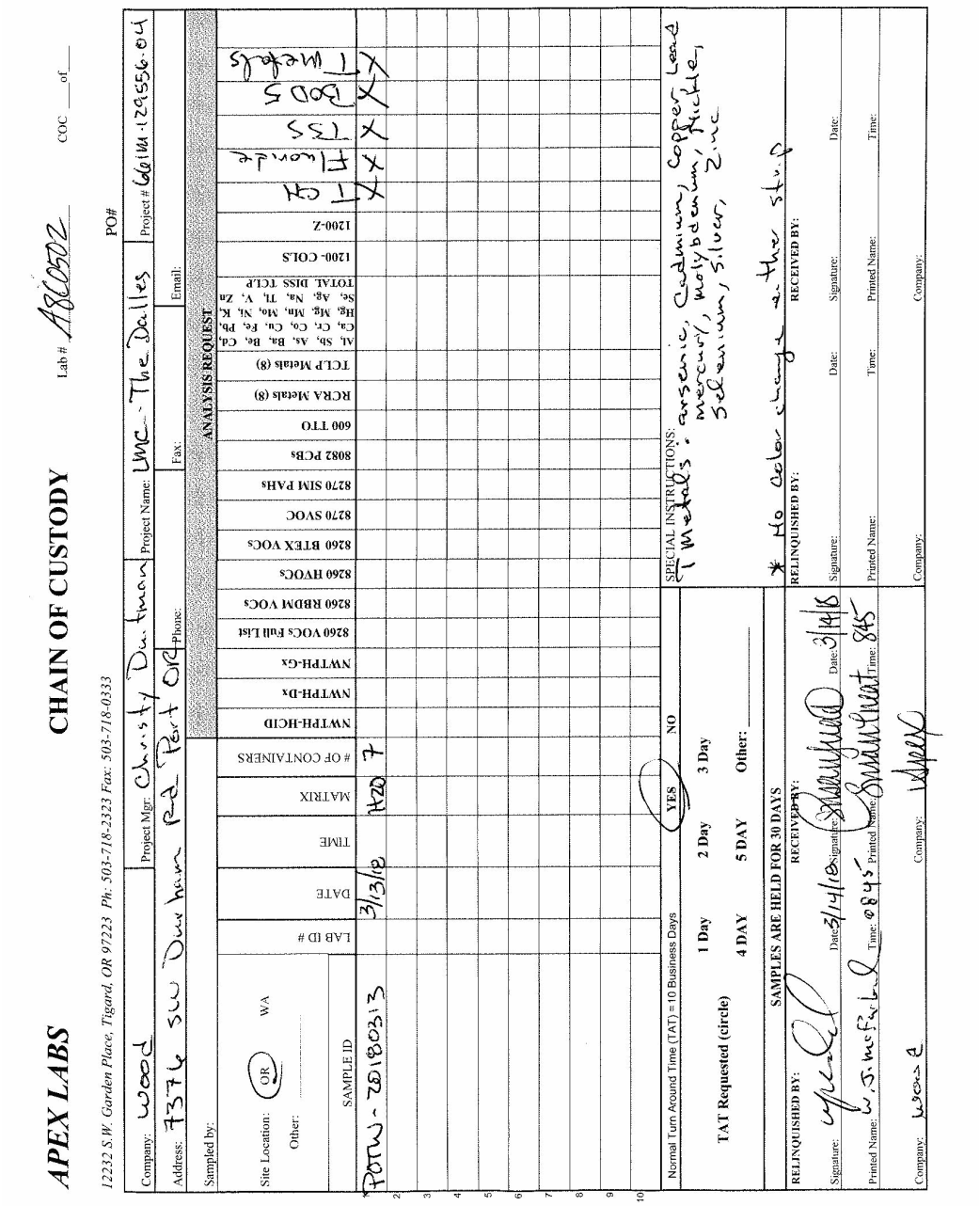
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46



APEX LABS **CHAIN OF CUSTODY** Lab # A8C0502 COC ___ of ___

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: Wood | Project Mgr: Christy Duitman | Project Name: LMC - The Dalles | Project # 661M-129556-04

Address: 7376 SW Durham Rd Port OR | Phone: | Fax: | Email:

Sampled by:

Site Location: OR WA
Other: ____

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z	T CH	Fluoride	TSS	BOD 5	T Metals
POTW-20180313		3/13/18		H2O	7																X	X	X	X	X
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle) 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ____

SPECIAL INSTRUCTIONS: T Metals: arsenic, Cadmium, Copper, Lead, mercury, molybdenum, Nickle, Selenium, Silver, Zinc

* No color change in the strip

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Date: 3/14/18	Date: 3/14/18	Date:	Date:
Printed Name: W.J. McFarland	Printed Name: Susan Lucat	Printed Name:	Printed Name:
Time: 0845	Time: 845	Time:	Time:
Company: Wood	Company: Apex	Company:	Company:

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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AMEC Foster Wheeler	Project: **LMC The Dalles**	
7376 SW Durham Road	Project Number: 661M-129556-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	04/09/18 14:46

APEX LABS COOLER RECEIPT FORM

Client: Wood _____ Element WO#: A8 C0502

Project/Project #: LMC The Dalles

Delivery info:

Date/Time Received: 3/14/18 @ 845 By: 8

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: (8) : 3/14/18 @ 845

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes_____ No ✓

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)							
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	2.6						
Ice Type: (Gel/Real/Other)							
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KF : 3-14-18 @ 0915

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes X No ___ Comments: No Ton CoC, Ton Labels reads 1500

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No___ NA_____

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

KF 3-14-18

Apex Laboratories

Philip Nerenberg

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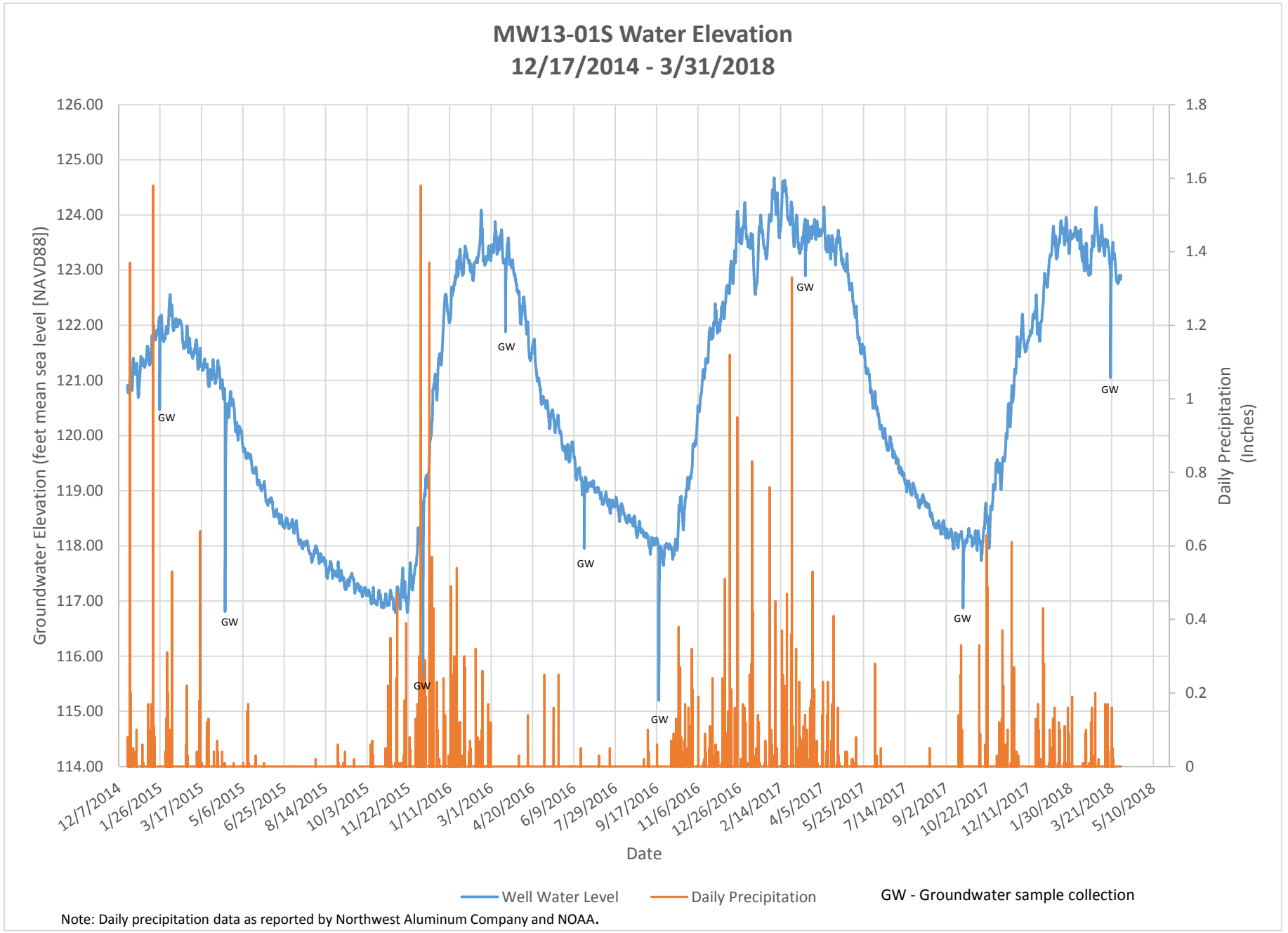
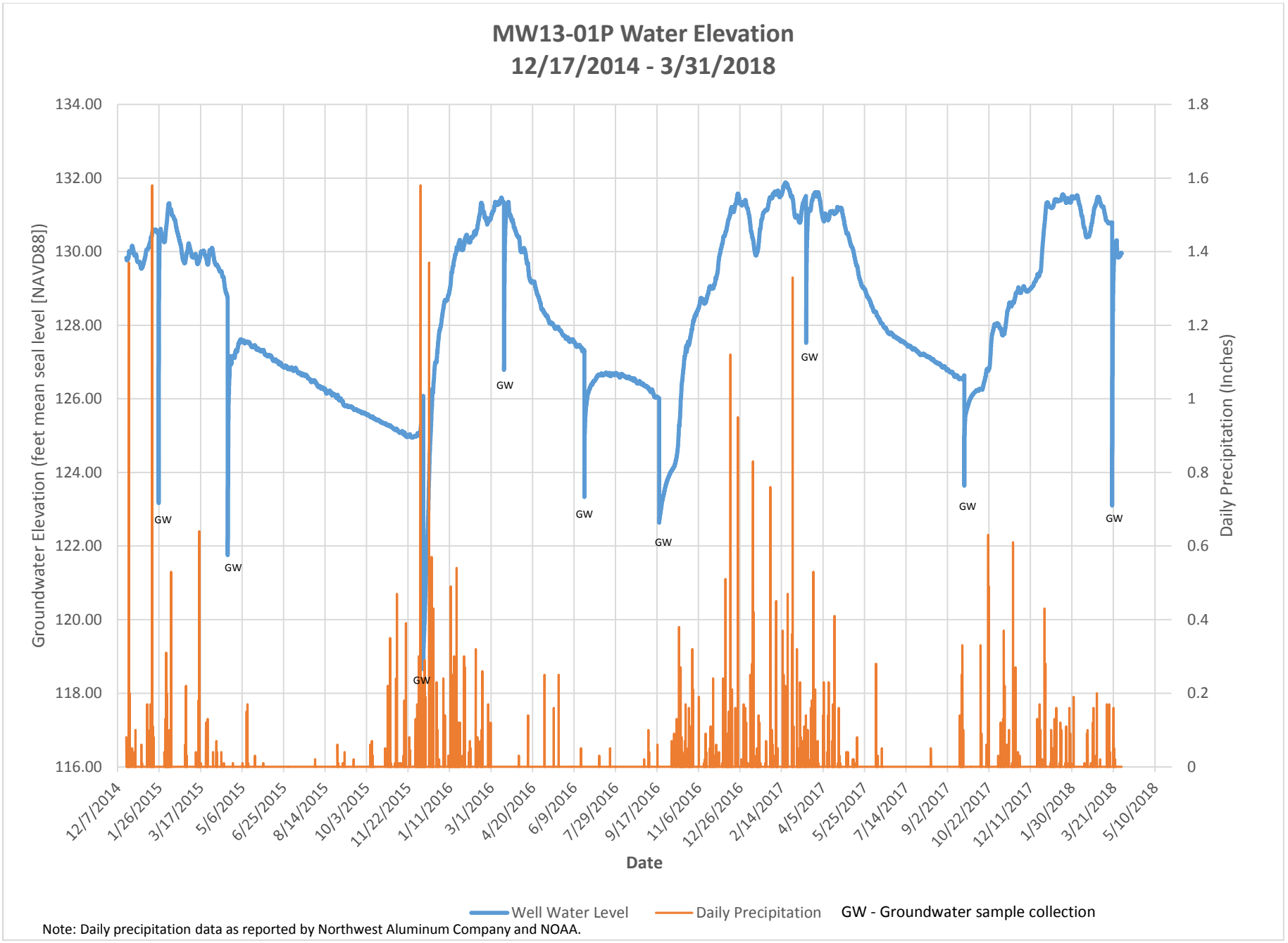
APPENDIX I

Hydrographs



Note: Daily precipitation data as reported by Northwest Aluminum Company and NOAA.



Note: Daily precipitation data as reported by Northwest Aluminum Company and NOAA.