

MEMORANDUM

To: Mr. Robert Williams, R.G.
Department of Environmental Quality
2020 SW Fourth Ave., Suite 400
Portland, OR 97201-4987

Sarah Prowell, R.G.
Prowell Environmental, Inc.
Phone: 503/452-0972
E-mail: sprowell@ix.netcom.com

Date: March 15, 2011

RE: TGA Well Deconstruction Waste Management
Cascade Corporation's TGA Remedy

1. Introduction

This memorandum describes management and disposal of well deconstruction materials that were generated during the decommissioning of sixteen Troutdale Gravel Aquifer (TGA) wells, on behalf of Cascade Corporation. The decommissionings were documented in Prowell Environmental's December 20, 2012 report titled *2012 Well Decommissionings Report, Troutdale Gravel Aquifer Remedy, Cascade Corporation*.¹ A preliminary description of waste management activities was presented in Section 3.4 of the decommissioning report and is more fully reported in this submittal, for the Department Environmental Quality's records.

The following sections summarize waste generation and handling, sampling, and profiling, permitting, and disposal. Associated laboratory reports are presented in [Attachment A](#). Waste permit, manifest, disposal ticket, and Waste Management communication records are presented in [Attachment B](#).

2. Waste Generation and Handling

During implementation of the above noted decommissioning project, well deconstruction waste was generated in July, August, November, and December 2012 during in situ and overdrill decommissioning of the following TGA wells, per DEQ's prior approval:

- DEQ-5i, EX-7, EX-10, EX-13, MW-6b, MW-8s, MW-8i, MW-9s, MW-9i, MW-10s, MW-10i, MW-27s, RW-2, RW-3, RW-4, and RW-5.

The well locations are shown in [Figures 1, 2, and 3](#). See the above cited 2012 well decommissioning report for further information on decommissioning approvals and methods.

Concrete and steel deconstruction debris was transported to a licensed landfill for disposal and recycling following decommissioning completion. Other wastes generated during well overdrilling included silica sand, bentonite, grout, pvc screen and casing debris, minor soil cuttings, and sorbent litter material.

¹ *2012 Well Decommissionings Report, Troutdale Gravel Aquifer Remedy, East Multnomah County, Cascade Corporation, Fairview, Oregon*; Prowell Environmental, December 20, 2012.

These wastes were placed into a total of 31 DOT-approved, 55-gallon drums², which were labeled, sealed, and temporarily staged on pallets in Cascade's fenced remediation yard.

3. Waste Sampling

Eight representative composite samples were collected from the drummed waste and were analyzed for volatile organic compounds (VOCs) using EPA Method 8260B. Each composite sample was collected by obtaining an aliquot of waste material from approximately 4 individual drums from depths of 6 to 12 inches below the top of drummed waste. The sample material was collected using a clean stainless steel trowel. It was then placed into a stainless steel container, where it was mixed for a composite sample. The composite sample material was transferred into a laboratory-prepared glass jar, and tamped firmly, filling the sample container completely to minimize air space. The container was then capped, sealed, labeled, and placed immediately into cool storage with accompanying trip blank and temperature blank, under chain-of-custody. The samples were couriered to ALS Environmental, Kelso, WA for analysis.

Four of the composite samples were collected on October 18, 2012 from the twelve drums of waste derived from decommissionings in July and August 2012. These samples were analyzed on October 29, 2012. The remaining four composite samples were collected on December 26, 2012, from the nineteen drums derived from decommissionings in November and December 2012. These samples were analyzed on January 3, 2013.

4. Waste Profile, Permitting, and Disposal

Laboratory analytical results report no detectable presence of VOCs in any of the eight composite samples collected, using an analytical method reporting limit of 9.4 micrograms per kilogram.

Based on the absence of detectable VOCs in each of the samples, Waste Management, Inc. approved the waste as Non-Hazardous Special Waste under Permit No. 111054OR, dated 3/5/13, for disposal at the Subtitle C Hillsboro Landfill facility located in Hillsboro, OR.

All drummed waste was transported to the landfill by West Coast Marine Cleaning, Inc. under manifest on March 7, 2013 and upon delivery, a waste receipt ticket was provided by Hillsboro Landfill.

Attachments:

[Figures 1, 2, and 3](#). Locations of TGA Well Deconstruction Waste Sources

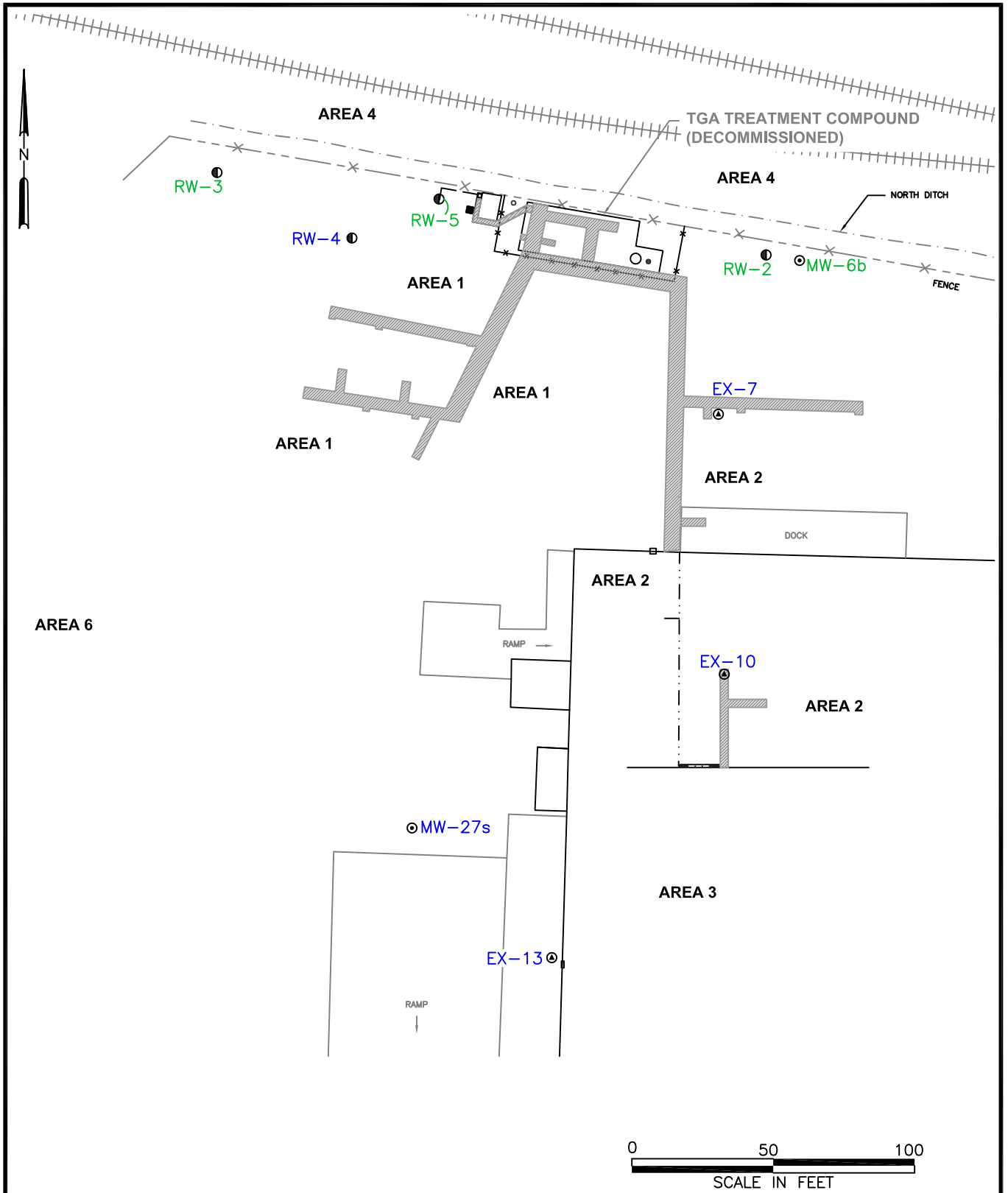
[Attachment A](#). Laboratory Analytical Reports

[Attachment B](#). Waste Permit and Associated Records

cc: John Cushing, Cascade Corporation

Cindy Bartlett, R.G., Geosyntec Consultants

² Three partially filled drums were later consolidated into one, for a revised total of 29 full drums of well deconstruction waste.



E X P L A N A T I O N

- ⊙ ● ○ TGA WELL
- UPPER TGA WELLS SHOWN IN BLUE
- LOWER TGA WELLS SHOWN IN GREEN

Figure 1
On-site Decommissioned Wells
Cascade Corporation - TGA Remedy

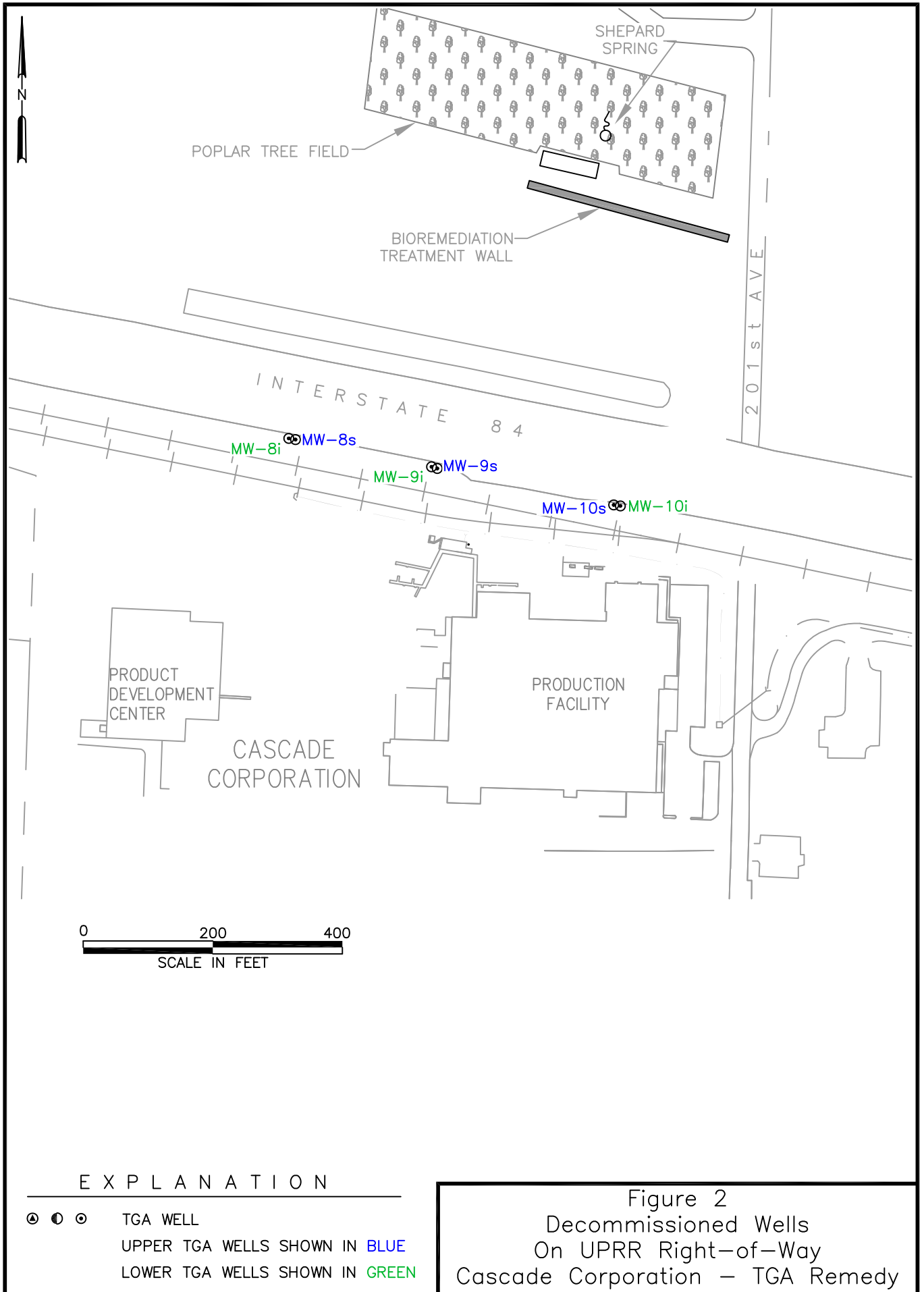


Figure 2
Decommissioned Wells
On UPRR Right-of-Way
Cascade Corporation – TGA Remedy

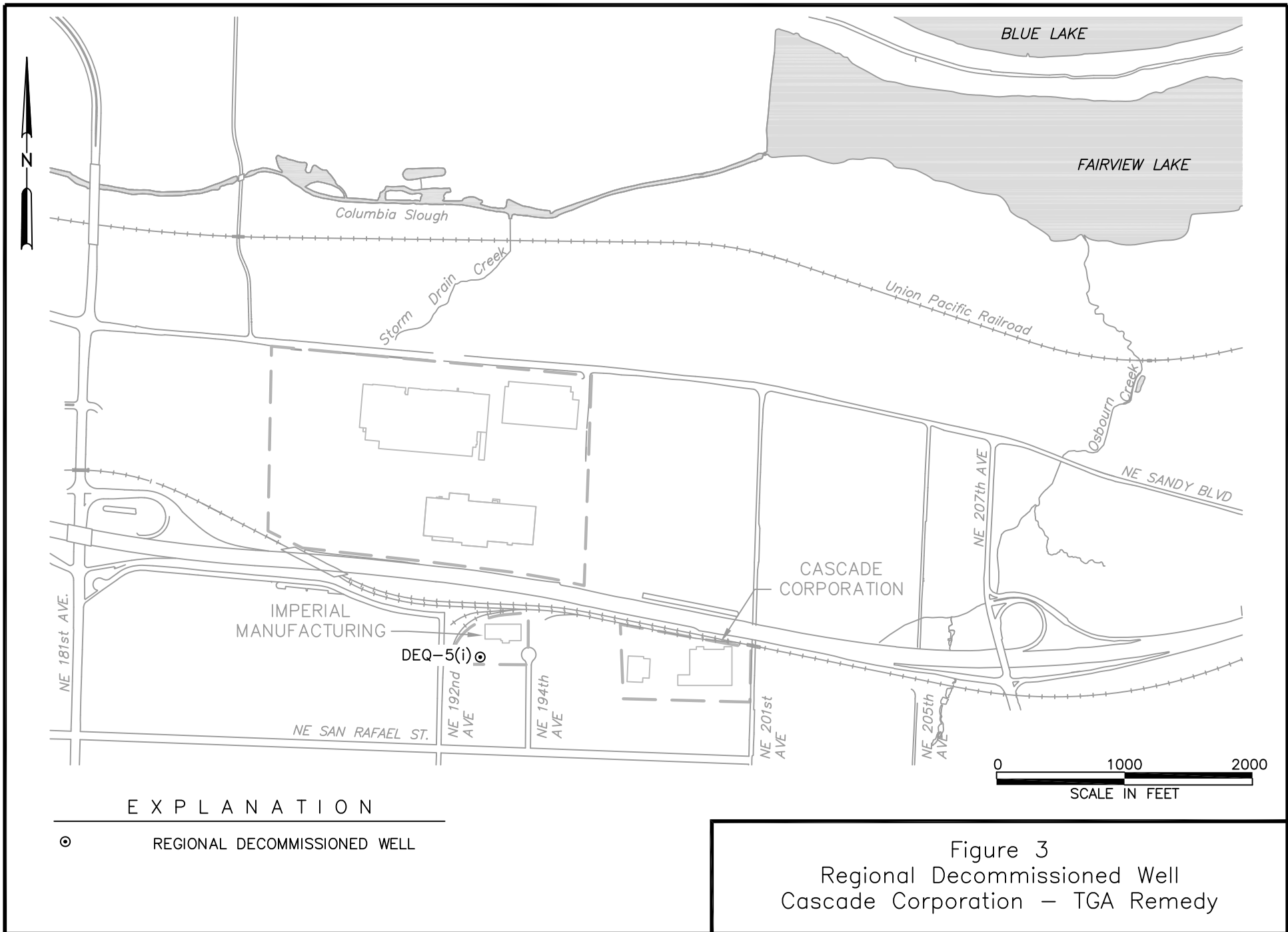


Figure 3
 Regional Decommissioned Well
 Cascade Corporation – TGA Remedy

Attachment A

Laboratory Analytical Reports



November 12, 2012

Analytical Report for Service Request No: K1210607

Sarah Prowell
Prowell Environmental, Inc.
2216 SW Sunset Blvd.
Portland, OR 97239

RE: Cascade TGA

Dear Sarah:

Enclosed are the results of the samples submitted to our laboratory on October 19, 2012. For your reference, these analyses have been assigned our service request number K1210607.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3363. You may also contact me via Email at Lisa.Domenighini@alsglobal.com.

Respectfully submitted,

Columbia Analytical Services, Inc. dba ALS Environmental

Lisa Domenighini
Project Manager

LD/ln

Page 1 of 28



ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
Columbia Analytical Services, Inc.

Part of the ALS Group A Campbell Brothers Limited Company

Environmental 

www.caslab.com ■ www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
 - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**Columbia Analytical Services, Inc. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjlabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Louisiana DHH	Not available	LA110003
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
New Mexico ED	http://www.nmenv.state.nm.us/dwb/Index.htm	-
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	4704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.caslab.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

ALS ENVIRONMENTAL

Client: Prowell Environmental, Incorporated **Service Request No.:** K1210607
Project: Cascade TGA **Date Received:** 10/19/12
Sample Matrix: Soil

CASE NARRATIVE

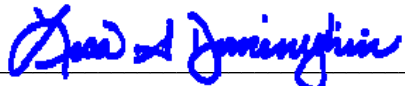
All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

Three soil samples and a trip blank sample were received for analysis at ALS Environmental on 10/19/12. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260

No anomalies associated with the analysis of these samples were observed.

Approved by 



PC LISA

Cooler Receipt and Preservation Form

Client / Project: Powell Service Request K12 10607

Received: 10/19/12 Opened: 10/19/12 By: VST Unloaded: 10/19/12 By: VST

1. Samples were received via? Mail ~~Fed Ex~~ ~~UPS~~ ~~DHL~~ ~~PDX~~ Courier ~~Hand Delivered~~
2. Samples were received in: (circle) Cooler ~~Box~~ ~~Envelope~~ ~~Other~~ NA
3. Were custody seals on coolers? NA Y ~~N~~ If yes, how many and where? 1 f
- If present, were custody seals intact? Y ~~N~~ If present, were they signed and dated? Y ~~N~~

Raw Temp	Corr. Temp	Raw Blank	Corr. Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	Filed
<u>3.5</u>	<u>3.5</u>			<u>Ø</u>	<u>297</u>	<u>NA</u>	<u>NA</u>	

7. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice ~~Dry Ice~~ ~~Sleeves~~
8. Were custody papers properly filled out (ink, signed, etc.)? NA Y ~~N~~
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y ~~N~~
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y ~~N~~
11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y ~~N~~
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y ~~N~~
13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y ~~N~~
14. Were VOA vials received without headspace? *Indicate in the table below.* NA Y ~~N~~
15. Was C12/Res negative? NA Y ~~N~~

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
OSWD-101812-1	K1210607-001	10/18/2012	10/19/2012	10/29/2012	20.2	
OSWD-101812-2	K1210607-002	10/18/2012	10/19/2012	10/29/2012	49.2	
OSWD-101812-3	K1210607-003	10/18/2012	10/19/2012	10/29/2012	35.5	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012
Date Analyzed: 10/29/2012

Duplicate Sample Summary
Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
OSWD-101812-1	K1210607-001	20.2	20.0	20.1	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: TB2
Lab Code: K1210607-004
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Vinyl Chloride	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromomethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichlorofluoromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichlorotrifluoroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Methylene Chloride	ND	U	2.0	1	10/28/12	10/28/12	KWG1212836	
trans-1,2-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1-Dichloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
cis-1,2-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloroform	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Carbon Tetrachloride	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichloroethene (TCE)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichloropropane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromodichloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
cis-1,3-Dichloropropene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
trans-1,3-Dichloropropene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,2-Trichloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Tetrachloroethene (PCE)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Dibromochloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromoform	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,3-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,4-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: TB2
Lab Code: K1210607-004

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	97	73-122	10/28/12	Acceptable
Toluene-d8	93	65-144	10/28/12	Acceptable
4-Bromofluorobenzene	96	68-117	10/28/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210607
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1212836-4
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Vinyl Chloride	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromomethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichlorofluoromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichlorotrifluoroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Methylene Chloride	ND	U	2.0	1	10/28/12	10/28/12	KWG1212836	
trans-1,2-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1-Dichloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
cis-1,2-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloroform	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Carbon Tetrachloride	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichloroethene (TCE)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichloropropane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromodichloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
cis-1,3-Dichloropropene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
trans-1,3-Dichloropropene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,2-Trichloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Tetrachloroethene (PCE)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Dibromochloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromoform	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,3-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,4-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210607
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1212836-4

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	73-122	10/28/12	Acceptable
Toluene-d8	94	65-144	10/28/12	Acceptable
4-Bromofluorobenzene	95	68-117	10/28/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: OSWD-101812-1
Lab Code: K1210607-001
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Chloromethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Vinyl Chloride	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Bromomethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Chloroethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Trichlorofluoromethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Trichlorotrifluoroethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Methylene Chloride	ND	U	49	1	10/29/12	10/29/12	KWG1212881	
trans-1,2-Dichloroethene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
cis-1,2-Dichloroethene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Chloroform	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,1,1-Trichloroethane (TCA)	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Carbon Tetrachloride	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloroethane (EDC)	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Trichloroethene (TCE)	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloropropane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Bromodichloromethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
2-Chloroethyl Vinyl Ether	ND	U	49	1	10/29/12	10/29/12	KWG1212881	
cis-1,3-Dichloropropene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
trans-1,3-Dichloropropene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,1,2-Trichloroethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Tetrachloroethene (PCE)	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Dibromochloromethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Chlorobenzene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
Bromoform	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,1,2,2-Tetrachloroethane	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,3-Dichlorobenzene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,4-Dichlorobenzene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichlorobenzene	ND	U	25	1	10/29/12	10/29/12	KWG1212881	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: OSWD-101812-1
Lab Code: K1210607-001

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	121	82-146	10/29/12	Acceptable
Toluene-d8	128	90-142	10/29/12	Acceptable
4-Bromofluorobenzene	118	88-127	10/29/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: OSWD-101812-2
Lab Code: K1210607-002
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Chloromethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Vinyl Chloride	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Bromomethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Chloroethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Trichlorofluoromethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Trichlorotrifluoroethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Methylene Chloride	ND	U	20	1	10/29/12	10/29/12	KWG1212881	
trans-1,2-Dichloroethene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
cis-1,2-Dichloroethene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Chloroform	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,1,1-Trichloroethane (TCA)	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Carbon Tetrachloride	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloroethane (EDC)	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Trichloroethene (TCE)	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloropropane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Bromodichloromethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
2-Chloroethyl Vinyl Ether	ND	U	20	1	10/29/12	10/29/12	KWG1212881	
cis-1,3-Dichloropropene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
trans-1,3-Dichloropropene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,1,2-Trichloroethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Tetrachloroethene (PCE)	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Dibromochloromethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Chlorobenzene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
Bromoform	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,1,2,2-Tetrachloroethane	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,3-Dichlorobenzene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,4-Dichlorobenzene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichlorobenzene	ND	U	9.9	1	10/29/12	10/29/12	KWG1212881	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: OSWD-101812-2
Lab Code: K1210607-002

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	118	82-146	10/29/12	Acceptable
Toluene-d8	126	90-142	10/29/12	Acceptable
4-Bromofluorobenzene	117	88-127	10/29/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: OSWD-101812-3
Lab Code: K1210607-003
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Chloromethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Vinyl Chloride	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Bromomethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Chloroethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Trichlorofluoromethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Trichlorotrifluoroethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Methylene Chloride	ND	U	28	1	10/29/12	10/29/12	KWG1212881	
trans-1,2-Dichloroethene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
cis-1,2-Dichloroethene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Chloroform	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,1,1-Trichloroethane (TCA)	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Carbon Tetrachloride	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloroethane (EDC)	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Trichloroethene (TCE)	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloropropane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Bromodichloromethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
2-Chloroethyl Vinyl Ether	ND	U	28	1	10/29/12	10/29/12	KWG1212881	
cis-1,3-Dichloropropene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
trans-1,3-Dichloropropene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,1,2-Trichloroethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Tetrachloroethene (PCE)	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Dibromochloromethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Chlorobenzene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
Bromoform	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,1,2,2-Tetrachloroethane	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,3-Dichlorobenzene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,4-Dichlorobenzene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichlorobenzene	ND	U	14	1	10/29/12	10/29/12	KWG1212881	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: OSWD-101812-3
Lab Code: K1210607-003

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	118	82-146	10/29/12	Acceptable
Toluene-d8	128	90-142	10/29/12	Acceptable
4-Bromofluorobenzene	115	88-127	10/29/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1212881-3
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Chloromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Vinyl Chloride	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Bromomethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Chloroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Trichlorofluoromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Trichlorotrifluoroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Methylene Chloride	ND	U	10	1	10/29/12	10/29/12	KWG1212881	
trans-1,2-Dichloroethene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
cis-1,2-Dichloroethene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Chloroform	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Carbon Tetrachloride	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloroethane (EDC)	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Trichloroethene (TCE)	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloropropane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Bromodichloromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
2-Chloroethyl Vinyl Ether	ND	U	10	1	10/29/12	10/29/12	KWG1212881	
cis-1,3-Dichloropropene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
trans-1,3-Dichloropropene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1,2-Trichloroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Tetrachloroethene (PCE)	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Dibromochloromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Chlorobenzene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Bromoform	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1,2,2-Tetrachloroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,3-Dichlorobenzene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,4-Dichlorobenzene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichlorobenzene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1212881-3

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	120	82-146	10/29/12	Acceptable
Toluene-d8	128	90-142	10/29/12	Acceptable
4-Bromofluorobenzene	116	88-127	10/29/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210607

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
TB2	K1210607-004	97	93	96
Batch QC	K1210796-019	94	93	93
Method Blank	KWG1212836-4	94	94	95
Batch QCMS	KWG1212836-1	95	97	98
Batch QCDMS	KWG1212836-2	96	94	98
Lab Control Sample	KWG1212836-3	94	94	96

Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane 73-122
Sur2 = Toluene-d8 65-144
Sur3 = 4-Bromofluorobenzene 68-117

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
OSWD-101812-1	K1210607-001	121	128	118
OSWD-101812-2	K1210607-002	118	126	117
OSWD-101812-3	K1210607-003	118	128	115
Method Blank	KWG1212881-3	120	128	116
Lab Control Sample	KWG1212881-1	140	129	118
Duplicate Lab Control Sample	KWG1212881-2	126	132	120

Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane 82-146
Sur2 = Toluene-d8 90-142
Sur3 = 4-Bromofluorobenzene 88-127

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210607
Date Extracted: 10/28/2012
Date Analyzed: 10/28/2012

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: Batch QC
Lab Code: K1210796-019
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1212836

Analyte Name	Sample Result	Batch QCMS KWG1212836-1 Matrix Spike			Batch QCDMS KWG1212836-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Vinyl Chloride	2.4	13.8	10.0	114	13.4	10.0	110	49-136	3	30
1,1-Dichloroethene	ND	13.2	10.0	132	13.1	10.0	131	59-171	1	30
Chloroform	ND	11.4	10.0	114	11.4	10.0	114	64-133	0	30
Carbon Tetrachloride	ND	11.5	10.0	115	11.3	10.0	113	53-161	2	30
Trichloroethene (TCE)	ND	11.3	10.0	113	11.1	10.0	111	53-139	2	30
Bromodichloromethane	ND	11.2	10.0	112	11.1	10.0	111	61-134	1	30
1,1,2-Trichloroethane	ND	11.3	10.0	113	11.3	10.0	113	74-124	0	30
Chlorobenzene	ND	11.2	10.0	112	11.2	10.0	112	69-126	0	30
1,2-Dichlorobenzene	ND	10.6	10.0	106	10.7	10.0	107	72-119	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210607
Date Extracted: 10/28/2012
Date Analyzed: 10/28/2012

**Lab Control Spike Summary
 Volatile Organic Compounds**

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1212836

Lab Control Sample
 KWG1212836-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dichlorodifluoromethane	10.2	10.0	102	32-124
Chloromethane	9.97	10.0	100	34-130
Vinyl Chloride	9.72	10.0	97	55-123
Bromomethane	10.0	10.0	100	35-113
Chloroethane	10.2	10.0	102	58-134
Trichlorofluoromethane	8.91	10.0	89	52-141
Trichlorotrifluoroethane	10.1	10.0	101	56-141
1,1-Dichloroethene	11.2	10.0	112	66-129
Methylene Chloride	9.42	10.0	94	71-122
trans-1,2-Dichloroethene	10.3	10.0	103	67-125
1,1-Dichloroethane	9.89	10.0	99	68-132
cis-1,2-Dichloroethene	9.70	10.0	97	71-118
Chloroform	10.3	10.0	103	70-129
1,1,1-Trichloroethane (TCA)	10.4	10.0	104	59-136
Carbon Tetrachloride	9.90	10.0	99	55-140
1,2-Dichloroethane (EDC)	10.2	10.0	102	56-142
Trichloroethene (TCE)	10.4	10.0	104	67-128
1,2-Dichloropropane	9.76	10.0	98	67-126
Bromodichloromethane	9.96	10.0	100	63-129
cis-1,3-Dichloropropene	9.93	10.0	99	62-132
trans-1,3-Dichloropropene	9.24	10.0	92	59-125
1,1,2-Trichloroethane	9.95	10.0	100	74-118
Tetrachloroethene (PCE)	9.99	10.0	100	62-126
Dibromochloromethane	9.63	10.0	96	67-126
Chlorobenzene	9.93	10.0	99	72-116
Bromoform	9.58	10.0	96	52-144
1,1,2,2-Tetrachloroethane	8.82	10.0	88	70-127
1,3-Dichlorobenzene	9.93	10.0	99	70-116
1,4-Dichlorobenzene	9.86	10.0	99	73-115
1,2-Dichlorobenzene	9.84	10.0	98	72-115

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210607
Date Extracted: 10/29/2012
Date Analyzed: 10/29/2012

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1212881

Analyte Name	Lab Control Sample KWG1212881-1 Lab Control Spike			Duplicate Lab Control Sample KWG1212881-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Dichlorodifluoromethane	40.6	50.0	81	41.6	50.0	83	38-160	2	40
Chloromethane	48.1	50.0	96	47.0	50.0	94	37-146	2	40
Vinyl Chloride	37.5	50.0	75	39.3	50.0	79	54-127	5	40
Bromomethane	38.2	50.0	76	34.8	50.0	70	22-180	9	40
Chloroethane	39.7	50.0	79	42.5	50.0	85	51-122	7	40
Trichlorofluoromethane	37.1	50.0	74	35.6	50.0	71	51-140	4	40
Trichlorotrifluoroethane	46.5	50.0	93	44.3	50.0	89	53-135	5	40
1,1-Dichloroethene	47.7	50.0	95	45.2	50.0	90	64-152	5	40
Methylene Chloride	39.6	50.0	79	42.8	50.0	86	65-122	8	40
trans-1,2-Dichloroethene	43.8	50.0	88	43.3	50.0	87	63-127	1	40
1,1-Dichloroethane	42.3	50.0	85	41.7	50.0	83	59-137	2	40
cis-1,2-Dichloroethene	47.3	50.0	95	47.3	50.0	95	62-138	0	40
Chloroform	53.2	50.0	106	44.9	50.0	90	61-137	17	40
1,1,1-Trichloroethane (TCA)	54.9	50.0	110	45.3	50.0	91	59-146	19	40
Carbon Tetrachloride	55.0	50.0	110	45.9	50.0	92	51-135	18	40
1,2-Dichloroethane (EDC)	49.7	50.0	99	46.2	50.0	92	65-121	7	40
Trichloroethene (TCE)	46.8	50.0	94	45.3	50.0	91	67-126	3	40
1,2-Dichloropropane	46.3	50.0	93	45.5	50.0	91	71-121	2	40
Bromodichloromethane	47.6	50.0	95	47.0	50.0	94	61-143	1	40
2-Chloroethyl Vinyl Ether	44.0	50.0	88	47.1	50.0	94	63-130	7	40
cis-1,3-Dichloropropene	48.9	50.0	98	48.3	50.0	97	58-138	1	40
trans-1,3-Dichloropropene	46.8	50.0	94	45.6	50.0	91	63-121	2	40
1,1,2-Trichloroethane	46.8	50.0	94	46.8	50.0	94	72-118	0	40
Tetrachloroethene (PCE)	53.5	50.0	107	49.5	50.0	99	66-126	8	40
Dibromochloromethane	50.9	50.0	102	48.5	50.0	97	69-120	5	40
Chlorobenzene	49.1	50.0	98	47.1	50.0	94	70-116	4	40
Bromoform	46.6	50.0	93	44.1	50.0	88	62-134	5	40
1,1,2,2-Tetrachloroethane	39.2	50.0	78	37.7	50.0	75	60-128	4	40
1,3-Dichlorobenzene	45.7	50.0	91	43.4	50.0	87	69-128	5	40
1,4-Dichlorobenzene	45.9	50.0	92	43.4	50.0	87	69-125	6	40
1,2-Dichlorobenzene	45.2	50.0	90	43.3	50.0	87	67-124	4	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

2nd window

Date: 10/27/12

Columbia Analytical Services, Inc. Tune File: BFBctune.a

By: KR

Injection Log

New Tune: NO

IS/SS Std. ID: 6820A 45F 11/12

MS27 - Agilent 5975C

315820

CCV Std ID: 6820A 46C 11/12/470 17/12

ICAL Date: 10/26/12 Cal 11992

MS/DMS/LCS/ICV Std ID: 6820A-26A 11/12/42F 11/12/26A 17/12

Second RV:

BFB Std. ID: 6820A-26A 11/12

36C 19/12/35F 10/12

LIMS ID: 1607212874/17836

12102820

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	1027F018	8260-Beta.md	4.9, 1.74ml		
2	CCV	29		10.15, 1.06ml		
3	LCS	30		10.65, 1.51, 1.52, 1.06ml		
4	K10796-19MS	31		8.8/4.4/4.4/4.4/6.8, 1.74ml		
5	↓ 190MS	32		↓	✓	
6	1A	33				
7	MRL	34		0.5/0.25, 1.50ml		
8	MB	35				
9	K13796-19	36			✓	
10	K10614-8	37			✓	TB48206
11	K10607-8	38			✓	TB48284
12	K10608-2	39			✓	TB48285
13	K10796-8	40			✓	
14	9	41			✓	
15	10	42			✓	
16	11	43			✓	
17	12	44			✓	
18	13	45			✓	
19	14	46			✓	
20	15	47			✓	
21	16	48			✓	
22	17	49			✓	
23	18	50			✓	
24	20	51			✓	
25	↓ 21	↓ 52	↓		✓	
26						
27						

10/31
11/1
11/1
10/31
11/1
11/2

Date: 10/29/12

Columbia Analytical Services, Inc. Tune File: Letturn

By: KA

Injection Log

New Tune: No

IS/SS Std. ID: 6820A-4M 11/28 MS24 - Agilent 5975

CCV Std ID: 6820A-41E 10/31/12 ICAL Date: 10/22/12 Cd 11986

MS/DMS/LCS/ICV Std ID: 6820A-76A 10/27/12 Second RV: 11.2.12

BFB Std. ID: 6820A-76A 11/15 LIMS ID: KW07212877/14881

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	1029F003	820.M	1 µl + 5ml		
2	CCV	4		25/5 µl + 50ml		
3	US	5		20/50/10/10 µl + 50ml		
4	BUS	6		1		
5	IB	7				
6	MRL	8		0.5/0.5 µl + 50ml		
7	MB	9				
8	Yuma BL	10				
9	Put BL	11				
10	K10614-1R	12				
11	6R	13				
12	K10607-1R	14				
13	3R	15				
14	K10608-1R	16				
15	IB	17				
16	K10758-1R	18				
17	K10607-2R	20/19				
18	IB	25/26				
19						
20						
21						
22						
23						
24						
25						
26						
27						

10/31
10/31
11/1
11/1
11/1
11/7
11/1

20/19
25/26
11.2.12
11.2.12



November 12, 2012

Analytical Report for Service Request No: K1210608

Sarah Prowell
Prowell Environmental, Inc.
2216 SW Sunset Blvd.
Portland, OR 97239

RE: Cascade TGA

Dear Sarah:

Enclosed are the results of the samples submitted to our laboratory on October 19, 2012. For your reference, these analyses have been assigned our service request number K1210608.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3363. You may also contact me via Email at Lisa.Domenighini@alsglobal.com.

Respectfully submitted,

Columbia Analytical Services, Inc. dba ALS Environmental

Lisa Domenighini
Project Manager

LD/ln

Page 1 of 24



ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
Columbia Analytical Services, Inc.

Part of the ALS Group A Campbell Brothers Limited Company

Environmental 

www.caslab.com ■ www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
 - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**Columbia Analytical Services, Inc. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjlabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Louisiana DHH	Not available	LA110003
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
New Mexico ED	http://www.nmenv.state.nm.us/dwb/Index.htm	-
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	4704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.caslab.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

ALS ENVIRONMENTAL

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request No.: K1210608
Date Received: 10/19/12

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One soil samples and a trip blank sample were received for analysis at ALS Environmental on 10/19/12. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260

No anomalies associated with the analysis of these samples were observed.

Approved by



PROJECT NAME <u>Cascade TGA</u>					NUMBER OF CONTAINERS	Semi-volatile Organics by GC/MS 625 <input type="checkbox"/> 8270 <input type="checkbox"/> 8270LL <input type="checkbox"/> Volatile Organics 624 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> 8260LL <input type="checkbox"/> Hydrocarbons (*see below) Gas <input type="checkbox"/> Diesel <input type="checkbox"/> BTEX <input type="checkbox"/> Fuel Fingerprint (FIQ) <input type="checkbox"/> Oil <input type="checkbox"/> Oil & Grease/TRPH <input type="checkbox"/> 1664 HEM <input type="checkbox"/> 1664 SGT <input type="checkbox"/> PCBs <input type="checkbox"/> Aroclors <input type="checkbox"/> Congeners <input type="checkbox"/> Pesticides/Herbicides 608 <input type="checkbox"/> 8081A <input type="checkbox"/> 8141A <input type="checkbox"/> 8151A <input type="checkbox"/> Tri <input type="checkbox"/> Tetra <input type="checkbox"/> 8151M <input type="checkbox"/> PAHS 8310 <input type="checkbox"/> SIM <input type="checkbox"/> Metals, Total or Dissolved (See list below) Cyanide <input type="checkbox"/> Hex-Chrom <input type="checkbox"/> pH, Cond, Cl, SO ₄ , PO ₄ , F, NO ₂ , NO ₃ , BOD, TSS, IDS, TOC, DOC (circle) NH ₃ -N, COD, Total-P, TKN, TOC, TOX 9020 <input type="checkbox"/> AOX 1650 <input type="checkbox"/> 506 <input type="checkbox"/>
PROJECT NUMBER						
PROJECT MANAGER <u>Prowell Environmental</u>						
COMPANY/ADDRESS <u>2216 SW Summit Blvd</u>						
CITY/STATE/ZIP <u>Portland OR 97239</u>						
E-MAIL ADDRESS						
PHONE # <u>(503) 452-0972</u>		FAX # <u>(503) 452-1427</u>				
SAMPLER'S SIGNATURE <u>Patrick E. Yadow</u>						
SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	REMARKS	
<u>RRWD-10180-1</u>	<u>10/18/12</u>	<u>13:10</u>		<u>Soil</u>	<u>1</u>	<u>X</u>
<u>TB 3</u>	<u>10/18/12</u>	<u>13:10</u>		<u>H₂O</u>	<u>2</u>	<u>X</u>
<u>Temp Blank</u>	<u>10/18/12</u>	<u>-</u>		<u>H₂O</u>	<u>1</u>	

REPORT REQUIREMENTS <input checked="" type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. Data Validation Report (includes all raw data) <input type="checkbox"/> IV. CLP Deliverable Report <input type="checkbox"/> V. EDD	INVOICE INFORMATION P.O. # _____ Bill To: <u>Cascade c/o Prowell</u>	Circle which metals are to be analyzed: Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
	TURNAROUND REQUIREMENTS <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 5 Day <input checked="" type="checkbox"/> Standard (10-15 working days) <input type="checkbox"/> Provide FAX Results Requested Report Date _____	SPECIAL INSTRUCTIONS/COMMENTS: <u>"Only analyze trip blank if sample contains detectable Vols"</u> <u>Rec'd: Bury 10/19/12 1220</u> <input type="checkbox"/> Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY: <u>Patrick E. Yadow</u> 10/18/12 17:00 Signature Date/Time <u>PAT YADOW</u> Printed Name Firm	RECEIVED BY: <u>B. Schmidt</u> 10/18/12 17:00 Signature Date/Time <u>B. Schmidt Prowell Env.</u> Printed Name Firm	RELINQUISHED BY: <u>B. Schmidt</u> 10/19/12 8:22 Signature Date/Time <u>B. Schmidt Prowell Env.</u> Printed Name Firm	RECEIVED BY: <u>Bury</u> 10/19/12 8:22 Signature Date/Time <u>Bury</u> Printed Name Firm
-----------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------



PC Lisa

Cooler Receipt and Preservation Form

Client / Project: Prowell Service Request K12 10/19/12

Received: 10/19/12 Opened: 10/19/12 By: BT Unloaded: 10/19/12 By: BT

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 F 1 B
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Temp	Corr. Temp	Raw Blank	Corr. Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	Filed
<u>0.2</u>	<u>0.2</u>	<u>0.8</u>	<u>0.8</u>	<u>∅</u>	<u>316</u>	<u>NA</u>	<u>NA</u>	

- 7. Packing material: Inserts Buggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 8. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 14. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 15. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210608

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
RRWD-101812-1	K1210608-001	10/18/2012	10/19/2012	10/29/2012	53.6	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210608
Date Collected: 10/18/2012
Date Received: 10/19/2012
Date Analyzed: 10/29/2012

Duplicate Sample Summary
Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
RRWD-101812-1	K1210608-001	53.6	51.2	52.4	5	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210608
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: TB3
Lab Code: K1210608-002
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Vinyl Chloride	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromomethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichlorofluoromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichlorotrifluoroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Methylene Chloride	ND	U	2.0	1	10/28/12	10/28/12	KWG1212836	
trans-1,2-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1-Dichloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
cis-1,2-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloroform	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Carbon Tetrachloride	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichloroethene (TCE)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichloropropane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromodichloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
cis-1,3-Dichloropropene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
trans-1,3-Dichloropropene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,2-Trichloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Tetrachloroethene (PCE)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Dibromochloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromoform	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,3-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,4-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210608
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: TB3
Lab Code: K1210608-002

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	96	73-122	10/28/12	Acceptable
Toluene-d8	95	65-144	10/28/12	Acceptable
4-Bromofluorobenzene	96	68-117	10/28/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210608
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1212836-4
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Vinyl Chloride	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromomethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichlorofluoromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichlorotrifluoroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Methylene Chloride	ND	U	2.0	1	10/28/12	10/28/12	KWG1212836	
trans-1,2-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1-Dichloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
cis-1,2-Dichloroethene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chloroform	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Carbon Tetrachloride	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Trichloroethene (TCE)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichloropropane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromodichloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
cis-1,3-Dichloropropene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
trans-1,3-Dichloropropene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,2-Trichloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Tetrachloroethene (PCE)	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Dibromochloromethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Chlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
Bromoform	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,3-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,4-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	
1,2-Dichlorobenzene	ND	U	0.50	1	10/28/12	10/28/12	KWG1212836	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210608
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1212836-4

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	73-122	10/28/12	Acceptable
Toluene-d8	94	65-144	10/28/12	Acceptable
4-Bromofluorobenzene	95	68-117	10/28/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210608
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: RRWD-101812-1
Lab Code: K1210608-001
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Chloromethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Vinyl Chloride	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Bromomethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Chloroethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Trichlorofluoromethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Trichlorotrifluoroethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Methylene Chloride	ND	U	19	1	10/29/12	10/29/12	KWG1212881	
trans-1,2-Dichloroethene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
cis-1,2-Dichloroethene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Chloroform	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,1,1-Trichloroethane (TCA)	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Carbon Tetrachloride	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloroethane (EDC)	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Trichloroethene (TCE)	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloropropane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Bromodichloromethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
2-Chloroethyl Vinyl Ether	ND	U	19	1	10/29/12	10/29/12	KWG1212881	
cis-1,3-Dichloropropene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
trans-1,3-Dichloropropene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,1,2-Trichloroethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Tetrachloroethene (PCE)	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Dibromochloromethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Chlorobenzene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
Bromoform	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,1,2,2-Tetrachloroethane	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,3-Dichlorobenzene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,4-Dichlorobenzene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichlorobenzene	ND	U	9.4	1	10/29/12	10/29/12	KWG1212881	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210608
Date Collected: 10/18/2012
Date Received: 10/19/2012

Volatile Organic Compounds

Sample Name: RRWD-101812-1
Lab Code: K1210608-001

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	122	82-146	10/29/12	Acceptable
Toluene-d8	128	90-142	10/29/12	Acceptable
4-Bromofluorobenzene	120	88-127	10/29/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210608
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1212881-3
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Chloromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Vinyl Chloride	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Bromomethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Chloroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Trichlorofluoromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Trichlorotrifluoroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Methylene Chloride	ND	U	10	1	10/29/12	10/29/12	KWG1212881	
trans-1,2-Dichloroethene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1-Dichloroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
cis-1,2-Dichloroethene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Chloroform	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Carbon Tetrachloride	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloroethane (EDC)	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Trichloroethene (TCE)	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichloropropane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Bromodichloromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
2-Chloroethyl Vinyl Ether	ND	U	10	1	10/29/12	10/29/12	KWG1212881	
cis-1,3-Dichloropropene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
trans-1,3-Dichloropropene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1,2-Trichloroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Tetrachloroethene (PCE)	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Dibromochloromethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Chlorobenzene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
Bromoform	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,1,2,2-Tetrachloroethane	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,3-Dichlorobenzene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,4-Dichlorobenzene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	
1,2-Dichlorobenzene	ND	U	5.0	1	10/29/12	10/29/12	KWG1212881	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210608
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1212881-3

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	120	82-146	10/29/12	Acceptable
Toluene-d8	128	90-142	10/29/12	Acceptable
4-Bromofluorobenzene	116	88-127	10/29/12	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210608

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
TB3	K1210608-002	96	95	96
Batch QC	K1210796-019	94	93	93
Method Blank	KWG1212836-4	94	94	95
Batch QCMS	KWG1212836-1	95	97	98
Batch QCDMS	KWG1212836-2	96	94	98
Lab Control Sample	KWG1212836-3	94	94	96

Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane 73-122
Sur2 = Toluene-d8 65-144
Sur3 = 4-Bromofluorobenzene 68-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210608

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
RRWD-101812-1	K1210608-001	122	128	120
Method Blank	KWG1212881-3	120	128	116
Lab Control Sample	KWG1212881-1	140	129	118
Duplicate Lab Control Sample	KWG1212881-2	126	132	120

Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane 82-146
Sur2 = Toluene-d8 90-142
Sur3 = 4-Bromofluorobenzene 88-127

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210608
Date Extracted: 10/28/2012
Date Analyzed: 10/28/2012

Matrix Spike/Duplicate Matrix Spike Summary
Volatil Organic Compounds

Sample Name: Batch QC
Lab Code: K1210796-019
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1212836

Analyte Name	Sample Result	Batch QCMS KWG1212836-1 Matrix Spike			Batch QCDMS KWG1212836-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Vinyl Chloride	2.4	13.8	10.0	114	13.4	10.0	110	49-136	3	30
1,1-Dichloroethene	ND	13.2	10.0	132	13.1	10.0	131	59-171	1	30
Chloroform	ND	11.4	10.0	114	11.4	10.0	114	64-133	0	30
Carbon Tetrachloride	ND	11.5	10.0	115	11.3	10.0	113	53-161	2	30
Trichloroethene (TCE)	ND	11.3	10.0	113	11.1	10.0	111	53-139	2	30
Bromodichloromethane	ND	11.2	10.0	112	11.1	10.0	111	61-134	1	30
1,1,2-Trichloroethane	ND	11.3	10.0	113	11.3	10.0	113	74-124	0	30
Chlorobenzene	ND	11.2	10.0	112	11.2	10.0	112	69-126	0	30
1,2-Dichlorobenzene	ND	10.6	10.0	106	10.7	10.0	107	72-119	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1210608
Date Extracted: 10/28/2012
Date Analyzed: 10/28/2012

**Lab Control Spike Summary
 Volatile Organic Compounds**

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1212836

Lab Control Sample
 KWG1212836-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dichlorodifluoromethane	10.2	10.0	102	32-124
Chloromethane	9.97	10.0	100	34-130
Vinyl Chloride	9.72	10.0	97	55-123
Bromomethane	10.0	10.0	100	35-113
Chloroethane	10.2	10.0	102	58-134
Trichlorofluoromethane	8.91	10.0	89	52-141
Trichlorotrifluoroethane	10.1	10.0	101	56-141
1,1-Dichloroethene	11.2	10.0	112	66-129
Methylene Chloride	9.42	10.0	94	71-122
trans-1,2-Dichloroethene	10.3	10.0	103	67-125
1,1-Dichloroethane	9.89	10.0	99	68-132
cis-1,2-Dichloroethene	9.70	10.0	97	71-118
Chloroform	10.3	10.0	103	70-129
1,1,1-Trichloroethane (TCA)	10.4	10.0	104	59-136
Carbon Tetrachloride	9.90	10.0	99	55-140
1,2-Dichloroethane (EDC)	10.2	10.0	102	56-142
Trichloroethene (TCE)	10.4	10.0	104	67-128
1,2-Dichloropropane	9.76	10.0	98	67-126
Bromodichloromethane	9.96	10.0	100	63-129
cis-1,3-Dichloropropene	9.93	10.0	99	62-132
trans-1,3-Dichloropropene	9.24	10.0	92	59-125
1,1,2-Trichloroethane	9.95	10.0	100	74-118
Tetrachloroethene (PCE)	9.99	10.0	100	62-126
Dibromochloromethane	9.63	10.0	96	67-126
Chlorobenzene	9.93	10.0	99	72-116
Bromoform	9.58	10.0	96	52-144
1,1,2,2-Tetrachloroethane	8.82	10.0	88	70-127
1,3-Dichlorobenzene	9.93	10.0	99	70-116
1,4-Dichlorobenzene	9.86	10.0	99	73-115
1,2-Dichlorobenzene	9.84	10.0	98	72-115

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1210608
Date Extracted: 10/29/2012
Date Analyzed: 10/29/2012

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1212881

Analyte Name	Lab Control Sample KWG1212881-1 Lab Control Spike			Duplicate Lab Control Sample KWG1212881-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Dichlorodifluoromethane	40.6	50.0	81	41.6	50.0	83	38-160	2	40
Chloromethane	48.1	50.0	96	47.0	50.0	94	37-146	2	40
Vinyl Chloride	37.5	50.0	75	39.3	50.0	79	54-127	5	40
Bromomethane	38.2	50.0	76	34.8	50.0	70	22-180	9	40
Chloroethane	39.7	50.0	79	42.5	50.0	85	51-122	7	40
Trichlorofluoromethane	37.1	50.0	74	35.6	50.0	71	51-140	4	40
Trichlorotrifluoroethane	46.5	50.0	93	44.3	50.0	89	53-135	5	40
1,1-Dichloroethene	47.7	50.0	95	45.2	50.0	90	64-152	5	40
Methylene Chloride	39.6	50.0	79	42.8	50.0	86	65-122	8	40
trans-1,2-Dichloroethene	43.8	50.0	88	43.3	50.0	87	63-127	1	40
1,1-Dichloroethane	42.3	50.0	85	41.7	50.0	83	59-137	2	40
cis-1,2-Dichloroethene	47.3	50.0	95	47.3	50.0	95	62-138	0	40
Chloroform	53.2	50.0	106	44.9	50.0	90	61-137	17	40
1,1,1-Trichloroethane (TCA)	54.9	50.0	110	45.3	50.0	91	59-146	19	40
Carbon Tetrachloride	55.0	50.0	110	45.9	50.0	92	51-135	18	40
1,2-Dichloroethane (EDC)	49.7	50.0	99	46.2	50.0	92	65-121	7	40
Trichloroethene (TCE)	46.8	50.0	94	45.3	50.0	91	67-126	3	40
1,2-Dichloropropane	46.3	50.0	93	45.5	50.0	91	71-121	2	40
Bromodichloromethane	47.6	50.0	95	47.0	50.0	94	61-143	1	40
2-Chloroethyl Vinyl Ether	44.0	50.0	88	47.1	50.0	94	63-130	7	40
cis-1,3-Dichloropropene	48.9	50.0	98	48.3	50.0	97	58-138	1	40
trans-1,3-Dichloropropene	46.8	50.0	94	45.6	50.0	91	63-121	2	40
1,1,2-Trichloroethane	46.8	50.0	94	46.8	50.0	94	72-118	0	40
Tetrachloroethene (PCE)	53.5	50.0	107	49.5	50.0	99	66-126	8	40
Dibromochloromethane	50.9	50.0	102	48.5	50.0	97	69-120	5	40
Chlorobenzene	49.1	50.0	98	47.1	50.0	94	70-116	4	40
Bromoform	46.6	50.0	93	44.1	50.0	88	62-134	5	40
1,1,2,2-Tetrachloroethane	39.2	50.0	78	37.7	50.0	75	60-128	4	40
1,3-Dichlorobenzene	45.7	50.0	91	43.4	50.0	87	69-128	5	40
1,4-Dichlorobenzene	45.9	50.0	92	43.4	50.0	87	69-125	6	40
1,2-Dichlorobenzene	45.2	50.0	90	43.3	50.0	87	67-124	4	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

2nd window

Date: 10/27/12

Columbia Analytical Services, Inc. Tune File: BFBchemca.

By: KR

Injection Log

New Tune: NO

IS/SS Std. ID: 6807A 45F 11/12

MS27 - Agilent 5975C

315820

CCV Std ID: 6807A 46C 11/12/470 17/12

ICAL Date: 10/26/12 Cal 11992

MS/DMS/LCS/ICV Std ID: 6807A 86A 11/12/42F 11/12/20 17/12

Second RV:

BFB Std. ID: 6807A - 260 11/12

JLC 1925 / 357A 10/31

LIMS ID: 1607212874/17836

12102825

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	1027F018	8260 - Beta mcl	4.4 µl in 4ml		
2	CCV	29		10 µl in 100 µl		
3	LCS	30		10 µl in 100 µl		
4	K10796-19ms	31		8.8/4.4/4.4/4.4/6.8 µl in 44 µl		
5	↓ 190ms	32		↓	✓	
6	IB	33				
7	MRL	34		0.5/0.25 µl in 50 µl		
8	MB	35				
9	K13796-19	36			✓	
10	K10614-8	37			✓	TB48206
11	K10607-84	38			✓	TB48284
12	K10608-2	39			✓	TB48285
13	K10796-8	40			✓	
14	9	41			✓	
15	10	42			✓	
16	11	43			✓	
17	12	44			✓	
18	13	45			✓	
19	14	46			✓	
20	15	47			✓	
21	16	48			✓	
22	17	49			✓	
23	18	50			✓	
24	20	51			✓	
25	21	52			✓	
26						
27						

10/31
11/1
11/1
(1/2)
11/1
11/2

Date: 10/29/12

Columbia Analytical Services, Inc. Tune File: 10/29/12

By: KR

Injection Log

New Tune: No

IS/SS Std. ID: 6820A-40A 11/28 MS24 - Agilent 5975

CCV Std ID: 6820A-41E 10/31/08 10A 10/2 ICAL Date: 10/22/12 Cal 11986

MS/DMS/LCS/ICV Std ID: 6820A-76A 10/28/08 49A 11/5/20 10/27 Second RV: 11.2.12

BFB Std. ID: 6820A-76A 11/15 26 10/28/08 38A 10/31 LIMS ID: KW07212877/14881

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	1029F003	8200.M	1 µl + 5ml		
2	CCV	4		25/5 µl + 50ml		
3	US	5		20/20/20/20 µl + 50ml		
4	BUS	6		1		
5	IB	7				
6	MRL	8		0.5/0.5 µl + 50ml		
7	MB	9				
8	Yumma B2	10				
9	Pet B2	11				
10	K10614-1R	12				
11	6R	13				
12	K10607-1R	14				
13	3R	15				
14	K10608-1R	16				
15	IB	17				
16	K10750-1R	18				
17	K10607-2R	20/19 17				
18	IB	25/26 18				
19						
20						
21						
22						
23						
24						
25						
26						
27						

10/31
10/31
11/1
11/1
11/1
11/7
11/1



January 4, 2013

Analytical Report for Service Request No: K1212799

Sarah Prowell
Prowell Environmental, Inc.
2216 SW Sunset Blvd.
Portland, OR 97239

RE: Cascade TGA

Dear Sarah:

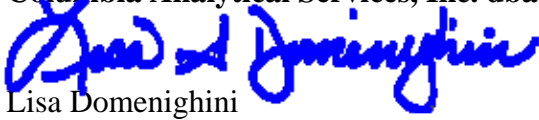
Enclosed are the results of the samples submitted to our laboratory on December 26, 2012. For your reference, these analyses have been assigned our service request number K1212799.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3363. You may also contact me via Email at Lisa.Domenighini@alsglobal.com.

Respectfully submitted,

Columbia Analytical Services, Inc. dba ALS Environmental


Lisa Domenighini
Project Manager

LD/as

Page 1 of 32



ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
Columbia Analytical Services, Inc.

Part of the ALS Group A Campbell Brothers Limited Company

Environmental 

www.caslab.com ■ www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
 - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**Columbia Analytical Services, Inc. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjlabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Louisiana DHH	Not available	LA110003
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
New Mexico ED	http://www.nmenv.state.nm.us/dwb/Index.htm	-
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	4704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.caslab.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

ALS ENVIRONMENTAL

Client: Prowell Environmental, Incorporated **Service Request No.:** K1212799
Project: Cascade TGA **Date Received:** 12/26/12
Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

Four soil samples and a trip blank sample were received for analysis at ALS Environmental on 12/26/12. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260

Calibration Verification Exceptions:

The following analytes were flagged as outside the lower control criterion for Continuing Calibration Verification (CCV) MS13\0103F005.D: trans-1,3-Dichloropropene and Bromoform. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The CAS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Surrogate Exceptions:

The control criteria were exceeded for Dibromofluoromethane in sample TGA WD-122612, TGA WD-122612-3, TGA WD-122612-4, TGA WD-122612-4MS, and TGA WD-122612-4DMS due to matrix interference. A re-analysis was performed, but produced similar results. No further corrective action was required.

Matrix Spike Recovery Exceptions:

The matrix spike recovery of Trichloroethene and 1,1,2-Trichlorobenzene for sample TGA WD-122612 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____



1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

Project Name <u>Cascade TGA</u>					Number of Containers	7D	14D	28D							
Project Number						TS-MET / Total Solids	8260C / VOC FP	ASTM D4129-05 Modified /	8260B						
Project Manager <u>Sarah Prowell</u>															
Company Name <u>Prowell Environ MENTAL</u>															
Company Address <u>2216 SW Sunset Blvd</u>															
City/State/Zip <u>Portland OR 97239</u>															
E-Mail Address															
Phone# <u>(503) 452-0972</u>		FAX# <u>(503) 452-1427</u>													
Sampler Signature <u>Patrick E. Yodon</u>															
Sample ID	Date	Time	Lab ID	Matrix						Remarks					
1 <u>TGAWD-122612-1</u>	<u>12/26/12</u>	<u>13:50</u>		<u>Soil</u>	<u>1</u>				<u>X</u>						
2 <u>TGAWD-122612-2</u>	<u>12/26/12</u>	<u>14:00</u>		<u>Soil</u>	<u>1</u>				<u>X</u>						
3 <u>TGAWD-122612-3</u>	<u>12/26/12</u>	<u>14:12</u>		<u>Soil</u>	<u>1</u>				<u>X</u>						
4 <u>TGAWD-122612-4</u>	<u>12/26/12</u>	<u>14:20</u>		<u>Soil</u>	<u>1</u>				<u>X</u>						
5 <u>TR:PBlonk 5</u>	<u>12/26/12</u>	<u>NA</u>		<u>H2O</u>	<u>1</u>				<u>X</u>						
6 <u>Temp Blank</u>	<u>NA</u>	<u>NA</u>		<u>H2O</u>	<u>1</u>										
7															
8															
9															
10															
11															

Report Requirements <input checked="" type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. Data Validation Report (includes all raw data) <input type="checkbox"/> IV. CLP Deliverable Report <input type="checkbox"/> V. EDD	Invoice Information P.O.# _____ Bill To: <u>Cascade c/o Prowell</u>	Circle which metals are to be analyzed Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg	
	Turnaround Requirements <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> 24 hr. _____ 48 hr. <input type="checkbox"/> Standard (10-15 working days) <input type="checkbox"/> Provide Fax Results Requested Report Date _____	Special Instructions/Comments: <u>*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One)</u> <input type="checkbox"/> Sample Shipment contains USDA regulated soil samples (check box if applicable)	
Relinquished By: <u>Patrick E. Yodon</u> <u>12/26/12</u> Signature Date/Time <u>PAT YADON</u> <u>APM MAINT</u> Printed Name Firm	Received By: <u>Karla Smith</u> <u>12/26/12</u> Signature Date/Time <u>Karla Smith</u> <u>ALS</u> Printed Name Firm	Relinquished By: Signature Date/Time Printed Name Firm	Received By: Signature Date/Time Printed Name Firm



PC Lisa

Cooler Receipt and Preservation Form

Client / Project: AW M Maint Service Request K12 12799

Received: 12/26/12 Opened: 12/26/12 By: SMW Unloaded: 12/26/12 By: SMW

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? One, side
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Temp	Corr. Temp	Raw Blank	Corr. Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-1.1	-1.4	3.6	9.2	-0.3	294	NA		NA	

- 7. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 8. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 14. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 15. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
TGAWD-122612-1	K1212799-001	12/26/2012	12/26/2012	12/27/2012	47.6	
TGAWD-122612-2	K1212799-002	12/26/2012	12/26/2012	12/27/2012	65.2	
TGAWD-122612-3	K1212799-003	12/26/2012	12/26/2012	12/27/2012	27.6	
TGAWD-122612-4	K1212799-004	12/26/2012	12/26/2012	12/27/2012	47.3	

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012
Date Analyzed: 12/27/2012

Duplicate Sample Summary
Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
TGAWD-122612-1	K1212799-001	47.6	45.4	46.5	5	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: K1212799-005
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Chloromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Vinyl Chloride	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Bromomethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Chloroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Trichlorofluoromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Trichlorotrifluoroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1-Dichloroethene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Methylene Chloride	ND	U	2.0	1	01/03/13	01/03/13	KWG1300159	
trans-1,2-Dichloroethene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1-Dichloroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
cis-1,2-Dichloroethene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Chloroform	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Carbon Tetrachloride	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Trichloroethene (TCE)	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,2-Dichloropropane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Bromodichloromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
cis-1,3-Dichloropropene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
trans-1,3-Dichloropropene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1,2-Trichloroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Tetrachloroethene (PCE)	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Dibromochloromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Chlorobenzene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Bromoform	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,3-Dichlorobenzene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,4-Dichlorobenzene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,2-Dichlorobenzene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: K1212799-005

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	86	73-122	01/03/13	Acceptable
Toluene-d8	100	65-144	01/03/13	Acceptable
4-Bromofluorobenzene	93	68-117	01/03/13	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1212799
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1300159-4
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Chloromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Vinyl Chloride	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Bromomethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Chloroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Trichlorofluoromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Trichlorotrifluoroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1-Dichloroethene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Methylene Chloride	ND	U	2.0	1	01/03/13	01/03/13	KWG1300159	
trans-1,2-Dichloroethene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1-Dichloroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
cis-1,2-Dichloroethene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Chloroform	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Carbon Tetrachloride	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Trichloroethene (TCE)	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,2-Dichloropropane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Bromodichloromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
cis-1,3-Dichloropropene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
trans-1,3-Dichloropropene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1,2-Trichloroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Tetrachloroethene (PCE)	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Dibromochloromethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Chlorobenzene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
Bromoform	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,3-Dichlorobenzene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,4-Dichlorobenzene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	
1,2-Dichlorobenzene	ND	U	0.50	1	01/03/13	01/03/13	KWG1300159	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1212799
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1300159-4

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	87	73-122	01/03/13	Acceptable
Toluene-d8	99	65-144	01/03/13	Acceptable
4-Bromofluorobenzene	94	68-117	01/03/13	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: TGAWD-122612-1
Lab Code: K1212799-001
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Chloromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Vinyl Chloride	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Bromomethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Chloroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Trichlorofluoromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Trichlorotrifluoroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Methylene Chloride	ND	U	21	1	01/03/13	01/03/13	KWG1300162	
trans-1,2-Dichloroethene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
cis-1,2-Dichloroethene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Chloroform	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1,1-Trichloroethane (TCA)	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Carbon Tetrachloride	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloroethane (EDC)	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Trichloroethene (TCE)	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloropropane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Bromodichloromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
2-Chloroethyl Vinyl Ether	ND	U	21	1	01/03/13	01/03/13	KWG1300162	
cis-1,3-Dichloropropene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
trans-1,3-Dichloropropene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1,2-Trichloroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Tetrachloroethene (PCE)	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Dibromochloromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Chlorobenzene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Bromoform	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1,2,2-Tetrachloroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,3-Dichlorobenzene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,4-Dichlorobenzene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichlorobenzene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: TGAWD-122612-1
Lab Code: K1212799-001

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	89	82-146	01/03/13	Acceptable
Toluene-d8	102	90-142	01/03/13	Acceptable
4-Bromofluorobenzene	98	88-127	01/03/13	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: TGAWD-122612-2
Lab Code: K1212799-002
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Chloromethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Vinyl Chloride	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Bromomethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Chloroethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Trichlorofluoromethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Trichlorotrifluoroethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Methylene Chloride	ND	U	15	1	01/03/13	01/03/13	KWG1300162	
trans-1,2-Dichloroethene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
cis-1,2-Dichloroethene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Chloroform	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,1,1-Trichloroethane (TCA)	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Carbon Tetrachloride	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloroethane (EDC)	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Trichloroethene (TCE)	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloropropane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Bromodichloromethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
2-Chloroethyl Vinyl Ether	ND	U	15	1	01/03/13	01/03/13	KWG1300162	
cis-1,3-Dichloropropene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
trans-1,3-Dichloropropene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,1,2-Trichloroethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Tetrachloroethene (PCE)	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Dibromochloromethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Chlorobenzene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
Bromoform	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,1,2,2-Tetrachloroethane	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,3-Dichlorobenzene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,4-Dichlorobenzene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichlorobenzene	ND	U	7.5	1	01/03/13	01/03/13	KWG1300162	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: TGAWD-122612-2
Lab Code: K1212799-002

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	68	82-146	01/03/13	Outside Control Limits
Toluene-d8	100	90-142	01/03/13	Acceptable
4-Bromofluorobenzene	98	88-127	01/03/13	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: TGAWD-122612-3
Lab Code: K1212799-003
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Chloromethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Vinyl Chloride	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Bromomethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Chloroethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Trichlorofluoromethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Trichlorotrifluoroethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Methylene Chloride	ND	U	37	1	01/03/13	01/03/13	KWG1300162	
trans-1,2-Dichloroethene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
cis-1,2-Dichloroethene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Chloroform	24		19	1	01/03/13	01/03/13	KWG1300162	
1,1,1-Trichloroethane (TCA)	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Carbon Tetrachloride	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloroethane (EDC)	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Trichloroethene (TCE)	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloropropane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Bromodichloromethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
2-Chloroethyl Vinyl Ether	ND	U	37	1	01/03/13	01/03/13	KWG1300162	
cis-1,3-Dichloropropene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
trans-1,3-Dichloropropene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,1,2-Trichloroethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Tetrachloroethene (PCE)	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Dibromochloromethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Chlorobenzene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
Bromoform	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,1,2,2-Tetrachloroethane	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,3-Dichlorobenzene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,4-Dichlorobenzene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichlorobenzene	ND	U	19	1	01/03/13	01/03/13	KWG1300162	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: TGAWD-122612-3
Lab Code: K1212799-003

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	60	82-146	01/03/13	Outside Control Limits
Toluene-d8	101	90-142	01/03/13	Acceptable
4-Bromofluorobenzene	101	88-127	01/03/13	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: TGAWD-122612-4
Lab Code: K1212799-004
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Chloromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Vinyl Chloride	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Bromomethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Chloroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Trichlorofluoromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Trichlorotrifluoroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Methylene Chloride	ND	U	21	1	01/03/13	01/03/13	KWG1300162	
trans-1,2-Dichloroethene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
cis-1,2-Dichloroethene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Chloroform	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1,1-Trichloroethane (TCA)	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Carbon Tetrachloride	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloroethane (EDC)	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Trichloroethene (TCE)	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloropropane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Bromodichloromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
2-Chloroethyl Vinyl Ether	ND	U	21	1	01/03/13	01/03/13	KWG1300162	
cis-1,3-Dichloropropene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
trans-1,3-Dichloropropene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1,2-Trichloroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Tetrachloroethene (PCE)	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Dibromochloromethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Chlorobenzene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
Bromoform	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,1,2,2-Tetrachloroethane	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,3-Dichlorobenzene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,4-Dichlorobenzene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichlorobenzene	ND	U	11	1	01/03/13	01/03/13	KWG1300162	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Collected: 12/26/2012
Date Received: 12/26/2012

Volatile Organic Compounds

Sample Name: TGAWD-122612-4
Lab Code: K1212799-004

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	50	82-146	01/03/13	Outside Control Limits
Toluene-d8	100	90-142	01/03/13	Acceptable
4-Bromofluorobenzene	102	88-127	01/03/13	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Paperboard

Service Request: K1212799
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1300162-5
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Chloromethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Vinyl Chloride	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Bromomethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Chloroethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Trichlorofluoromethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Trichlorotrifluoroethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Methylene Chloride	ND	U	10	1	01/03/13	01/03/13	KWG1300162	
trans-1,2-Dichloroethene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,1-Dichloroethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
cis-1,2-Dichloroethene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Chloroform	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Carbon Tetrachloride	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloroethane (EDC)	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Trichloroethene (TCE)	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichloropropane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Bromodichloromethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
2-Chloroethyl Vinyl Ether	ND	U	10	1	01/03/13	01/03/13	KWG1300162	
cis-1,3-Dichloropropene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
trans-1,3-Dichloropropene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,1,2-Trichloroethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Tetrachloroethene (PCE)	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Dibromochloromethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Chlorobenzene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
Bromoform	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,1,2,2-Tetrachloroethane	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,3-Dichlorobenzene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,4-Dichlorobenzene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	
1,2-Dichlorobenzene	ND	U	5.0	1	01/03/13	01/03/13	KWG1300162	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Results

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Paperboard

Service Request: K1212799
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1300162-5

Units: ug/Kg
Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	82-146	01/03/13	Acceptable
Toluene-d8	103	90-142	01/03/13	Acceptable
4-Bromofluorobenzene	101	88-127	01/03/13	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1212799

**Surrogate Recovery Summary
 Volatile Organic Compounds**

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
Trip Blank	K1212799-005	86	100	93
Batch QC	K1212857-029	89	100	92
Method Blank	KWG1300159-4	87	99	94
Batch QCMS	KWG1300159-1	91	101	95
Batch QCDMS	KWG1300159-2	89	101	95
Lab Control Sample	KWG1300159-3	91	100	98

Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane	73-122
Sur2 = Toluene-d8	65-144
Sur3 = 4-Bromofluorobenzene	68-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799

**Surrogate Recovery Summary
 Volatile Organic Compounds**

Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
TGAWD-122612-1	K1212799-001	89	102	98
TGAWD-122612-2	K1212799-002	68 *	100	98
TGAWD-122612-3	K1212799-003	60 *	101	101
TGAWD-122612-4	K1212799-004	50 *	100	102
Method Blank	KWG1300162-5	108	103	101
TGAWD-122612-4MS	KWG1300162-1	46 *	99	105
TGAWD-122612-4DMS	KWG1300162-2	47 *	103	103
Lab Control Sample	KWG1300162-3	90	105	106
Duplicate Lab Control Sample	KWG1300162-4	110	105	107

Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane	82-146
Sur2 = Toluene-d8	90-142
Sur3 = 4-Bromofluorobenzene	88-127

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1212799
Date Extracted: 01/03/2013
Date Analyzed: 01/03/2013

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: Batch QC
Lab Code: K1212857-029
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1300159

Analyte Name	Sample Result	Batch QCMS KWG1300159-1 Matrix Spike			Batch QCDMS KWG1300159-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Vinyl Chloride	2.0	12.4	10.0	105	11.3	10.0	93	49-136	10	30
1,1-Dichloroethene	0.74	13.5	10.0	127	12.2	10.0	115	59-171	10	30
Chloroform	ND	11.4	10.0	114	10.8	10.0	108	64-133	5	30
Carbon Tetrachloride	ND	9.37	10.0	94	8.76	10.0	88	53-161	7	30
Trichloroethene (TCE)	4.6	15.3	10.0	107	14.3	10.0	97	53-139	7	30
Bromodichloromethane	ND	10.7	10.0	107	10.5	10.0	105	61-134	2	30
1,1,2-Trichloroethane	ND	10.5	10.0	105	10.4	10.0	104	74-124	1	30
Chlorobenzene	ND	10.1	10.0	101	9.40	10.0	94	69-126	7	30
1,2-Dichlorobenzene	ND	10.9	10.0	109	10.6	10.0	106	72-119	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Soil

Service Request: K1212799
Date Extracted: 01/03/2013
Date Analyzed: 01/03/2013

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: TGAWD-122612-4
Lab Code: K1212799-004
Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1300162

Analyte Name	Sample Result	TGAWD-122612-4MS KWG1300162-1 Matrix Spike			TGAWD-122612-4DMS KWG1300162-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Vinyl Chloride	ND	72.1	103	70	71.4	104	68	31-140	1	40
1,1-Dichloroethene	ND	149	103	145	147	104	140	31-153	2	40
Chloroform	ND	95.7	103	93	89.0	104	85	43-133	7	40
Carbon Tetrachloride	ND	88.2	103	86	77.3	104	74	10-144	13	40
Trichloroethene (TCE)	ND	170	103	165 *	160	104	153 *	18-145	6	40
Bromodichloromethane	ND	54.6	103	53	52.8	104	51	14-146	3	40
1,1,2-Trichloroethane	ND	28.0	103	27 *	24.9	104	24 *	35-130	12	40
Chlorobenzene	ND	90.8	103	88	83.0	104	79	15-124	9	40
1,2-Dichlorobenzene	ND	72.1	103	70	67.4	104	65	10-124	7	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Water

Service Request: K1212799
Date Extracted: 01/03/2013
Date Analyzed: 01/03/2013

**Lab Control Spike Summary
 Volatile Organic Compounds**

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1300159

Lab Control Sample
 KWG1300159-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dichlorodifluoromethane	10.2	10.0	102	32-124
Chloromethane	11.9	10.0	119	34-130
Vinyl Chloride	10.1	10.0	101	55-123
Bromomethane	8.87	10.0	89	35-113
Chloroethane	11.1	10.0	111	58-134
Trichlorofluoromethane	9.43	10.0	94	52-141
Trichlorotrifluoroethane	10.1	10.0	101	56-141
1,1-Dichloroethene	12.1	10.0	121	66-129
Methylene Chloride	10.4	10.0	104	71-122
trans-1,2-Dichloroethene	10.5	10.0	105	67-125
1,1-Dichloroethane	11.2	10.0	112	68-132
cis-1,2-Dichloroethene	10.5	10.0	105	71-118
Chloroform	10.9	10.0	109	70-129
1,1,1-Trichloroethane (TCA)	9.69	10.0	97	59-136
Carbon Tetrachloride	8.94	10.0	89	55-140
1,2-Dichloroethane (EDC)	11.8	10.0	118	56-142
Trichloroethene (TCE)	10.5	10.0	105	67-128
1,2-Dichloropropane	10.8	10.0	108	67-126
Bromodichloromethane	10.2	10.0	102	63-129
cis-1,3-Dichloropropene	8.21	10.0	82	62-132
trans-1,3-Dichloropropene	7.24	10.0	72	59-125
1,1,2-Trichloroethane	10.5	10.0	105	74-118
Tetrachloroethene (PCE)	9.88	10.0	99	62-126
Dibromochloromethane	8.84	10.0	88	67-126
Chlorobenzene	9.88	10.0	99	72-116
Bromoform	7.55	10.0	76	52-144
1,1,2,2-Tetrachloroethane	10.7	10.0	107	70-127
1,3-Dichlorobenzene	10.5	10.0	105	70-116
1,4-Dichlorobenzene	10.6	10.0	106	73-115
1,2-Dichlorobenzene	10.4	10.0	104	72-115

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: Prowell Environmental, Incorporated
Project: Cascade TGA
Sample Matrix: Misc. solid

Service Request: K1212799
Date Extracted: 01/03/2013
Date Analyzed: 01/03/2013

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030A
Analysis Method: 8260C

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1300162

Analyte Name	Lab Control Sample KWG1300162-3 Lab Control Spike			Duplicate Lab Control Sample KWG1300162-4 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Dichlorodifluoromethane	43.6	50.0	87	43.7	50.0	87	38-160	0	40
Chloromethane	56.3	50.0	113	57.8	50.0	116	37-146	3	40
Vinyl Chloride	44.9	50.0	90	45.4	50.0	91	54-127	1	40
Bromomethane	64.0	50.0	128	62.7	50.0	125	22-180	2	40
Chloroethane	50.4	50.0	101	50.6	50.0	101	51-122	0	40
Trichlorofluoromethane	39.6	50.0	79	39.1	50.0	78	51-140	1	40
Trichlorotrifluoroethane	46.8	50.0	94	45.8	50.0	92	53-135	2	40
1,1-Dichloroethene	55.1	50.0	110	54.7	50.0	109	64-152	1	40
Methylene Chloride	44.7	50.0	89	45.1	50.0	90	65-122	1	40
trans-1,2-Dichloroethene	47.9	50.0	96	46.8	50.0	94	63-127	2	40
1,1-Dichloroethane	51.8	50.0	104	54.0	50.0	108	59-137	4	40
cis-1,2-Dichloroethene	46.3	50.0	93	47.4	50.0	95	62-138	2	40
Chloroform	51.3	50.0	103	54.3	50.0	109	61-137	6	40
1,1,1-Trichloroethane (TCA)	44.8	50.0	90	53.1	50.0	106	59-146	17	40
Carbon Tetrachloride	50.2	50.0	100	57.2	50.0	114	51-135	13	40
1,2-Dichloroethane (EDC)	51.3	50.0	103	52.9	50.0	106	65-121	3	40
Trichloroethene (TCE)	54.0	50.0	108	56.0	50.0	112	67-126	4	40
1,2-Dichloropropane	54.5	50.0	109	55.5	50.0	111	71-121	2	40
Bromodichloromethane	51.5	50.0	103	51.9	50.0	104	61-143	1	40
2-Chloroethyl Vinyl Ether	48.9	50.0	98	52.0	50.0	104	63-130	6	40
cis-1,3-Dichloropropene	50.9	50.0	102	50.7	50.0	101	58-138	0	40
trans-1,3-Dichloropropene	52.4	50.0	105	52.1	50.0	104	63-121	0	40
1,1,2-Trichloroethane	51.3	50.0	103	50.7	50.0	101	72-118	1	40
Tetrachloroethene (PCE)	60.3	50.0	121	58.3	50.0	117	66-126	3	40
Dibromochloromethane	52.2	50.0	104	51.2	50.0	102	69-120	2	40
Chlorobenzene	54.5	50.0	109	54.0	50.0	108	70-116	1	40
Bromoform	54.6	50.0	109	54.4	50.0	109	62-134	0	40
1,1,2,2-Tetrachloroethane	47.7	50.0	95	46.8	50.0	94	60-128	2	40
1,3-Dichlorobenzene	54.0	50.0	108	53.0	50.0	106	69-128	2	40
1,4-Dichlorobenzene	50.2	50.0	100	49.8	50.0	100	69-125	1	40
1,2-Dichlorobenzene	52.2	50.0	104	51.2	50.0	102	67-124	2	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

first window

Date: 1/3/13

Columbia Analytical Services, Inc. Tune File: RFB1.U

By: SD

Injection Log

New Tune: NO

IS/SS Std. ID: 69V0A-97E ex 1/7/13 MS13 - Agilent 5973

Run: 324552

CCV Std ID: 69V0A-21A ex 1/7/13
21B ex 2/3/13

ICAL Date: 11/29/12/ Cal 12064

MS/DMS/LCS/ICV Std ID: 69V0A-22C ex 1/9/24A ex 1/10/24E ex 1/10/18B ex 1/3/20B ex 1/4

Second RV: KN11413

BFB Std. ID: 69V0A-8C ex 1/18/13

LIMS ID: KWGI300147/1300159

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	01035003	8260.m	44ul → 50ml		
2	CCV		4	10/5ul → 50ml		NR
3	CCV		5	↓		
4	LCS		6	10/2/5/5/7.5ul → 50ml		
5	K12857-029ms		7	8/10/4/4/6ul → 50ml		
6	↓ 290ms		8	↓	✓	
7	IB		9			
8	MB		10			
9	K12857-028		11		✓	TB
10	K12799-005		12		✓	TB
11	K12857-029		13		✓	
12	30		14		✓	
13	26 Dil		15	2.5x 20ml → 50ml	✓	NR
14	26		16		✓	
15	31A.1		17	5x 10ml → 50ml	✓	
16	31		18		✓	
17	8		19	200x 250ul → 50ml	✓	
18	27A.1		20	1500x 20ul → 50ml	✓	
19	27		21	250x 200ul → 50ml	✓	
20	IB IB ^{50ul}		22			
21	K12857-017		23	10x 5ml → 50ml	✓	
22	25 Dil		24	5,000x 10ul → 50ml	✓	
23	25		25	500x 100ul → 50ml	✓	
24	18		26	10x 5ml → 50ml	✓	
25	IB		27			
26	K12857-010		28	2.5x 20ml → 50ml	✓	
27	IB		29			

well out side of page low low

IB 30 ↓

Date: 1/3/13

Columbia Analytical Services, Inc. Tune File: testrun

By: KA

Injection Log

New Tune: NP

IS/SS Std. ID: 6909A - 240 43 MS24 - Agilent 5975

324560

CCV Std ID: 6909A - 230119/6909A 220 46

ICAL Date: 11/2/12 Cal 12022

MS/DMS/LCS/ICV Std ID: 6909A - 220 49/14A 40/14B 10/10A 13 Second RV: 11/4/13

BFB Std. ID: 6909A - 80118 20B 14/24D 313

LIMS ID: 606130156 / 0112

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	0103FOOS	8260.M	1ul 15ml		
2	Soil CW	6		25/15ul 150ml		
3	↓ LLS	7		50/50/10ul 120/15ul 150ml		
4	↓ DMS	8		↓		
5	IB	9				
6	MRL	10		1/05ul 150ml		
7	MB	11				
8	Pat STBL 12/3	12				
9	Hydro STB 12/3	13				
10	K12621-1	14				
11	K12673-8	15				
12	K12799-1	16				
13	2	17				
14	3	18				
15	4	19				
16	2R 7ms ^{KA notes}	20				
17	↓ 3R 9ms	21	+			
18	4R	22				
19	4ms	23		50/50/10ul 120/15ul 150ml		
20	↓ 40ms	24	↓	↓		
21						
22						
23						
24						
25						
26						
27						

Attachment B

Waste Permit & Associated Records

Hillsboro Landfill, Inc.

3205 SE MINTER BRIDGE ROAD HILLSBORO, OR 97123

PERMIT # 1110540R

Tracking Number 16408

PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS

This permit authorizes disposal of Customer's waste materials in accordance with the Industrial Waste & Disposal Services Agreement dated _____.

EXPIRES: 7/10/2013

GENERATOR: CASCADE CORPORATION

DESCRIPTION: DRILL CUTTINGS, WELL DECONSTRUCTION DEBRIS	TONS: 41 drums
<input checked="" type="checkbox"/> SPECIAL WASTE <input type="checkbox"/> CS <input type="checkbox"/> C&D <input type="checkbox"/> CLEAN-UP	
LOCATION: FAIRVIEW, OREGON 2201 NE 201ST AVENUE	COUNTY: Multnomah
CONTACT: SARAH PROWELL	PHONE: 503-452-0972
	FAX: sprowell@ix.netcom.com


BILLING: Landfill account PROWELL ENVIRONMENTAL	PO#: N/A	JOB#: N/A
--------------------------------------------------------	-----------------	------------------

We accept business checks, cash, VISA / Mastercard or charge (with prior approval)

SPECIAL HANDLING : CONTACT LANDFILL 24 HOURS PRIOR TO DELIVERY DRIVER MUST REMOVE ALL DRUM LIDS FOR INSPECTION BY LANDFILL FIELD TECHS PRIOR TO DISPOSAL HISTORIC SOURCE OF CONTAMINATION INTERPRETED TO BE DISCHARGE OF CONTAMINATED GROUNDWATER FROM TGA NEAR THE TRUNCATION AND TSA RECHARGE IN GOURNDWATER MOUND AREA, SECTION 5.2 OF DEQ ROD. SECTION 6.3.1 DRILL CUTTINGS, EXCAVATED SOILS, OR GROUNDWATER EXTRACTED DURING THE TSA REMEDY WOULD NOT BE A HAZARDOUS WASTE, UNLESS CONTAMINANT CONCENTRATIONS EXCEED TOXICITY CHARACTERISTIC REGULATORY LEVELS SPECIFIED IN 40 CFR PART 261.24

MK

TyT

APPROVED:  KRISTIN CASTNER DATE: 03/15/13 2:40:42 PM

A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER

THERE IS A MINIMUM CHARGE OF \$50-\$60 FOR EACH LOAD OF SPECIAL WASTE

WASTE MANAGEMENT, INC.NON HAZARDOUS WASTE DISPOSAL SOLUTIONS FOR THE PACIFIC NORTHWEST



WASTE MANAGEMENT

HAZARDOUS WASTE IS STRICTLY PROHIBITED

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone (877) 926-2462	4. Waste Tracking Number 030713-001
5. Generator's Name and Mailing Address CASCADE CORPORATION 2201 NE 201st. AVE FAIRVIEW, OR. 97204 (503) 984-4154		Generator's Site Address (if different than mailing address)		
6. Transporter 1 Company Name WEST COAST MARINE CLEANING, INC.		U.S. EPA ID Number W A D 9 8 8 4 7 9 4 4 0		
7. Transporter 2 Company Name		U.S. EPA ID Number		
8. Designated Facility Name and Site Address HILLSBORO LANDFILL, INC. 3205 SE MINTER BRIDGE ROAD HILLSBORO, OR. 97321		U.S. EPA ID Number not required		
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity
		No.	Type	12. Unit Wt./Vol.
1. NON-REGULATED SOLIDS PER 40 & 49 CFR, (DRILL CUTTINGS & DEBRIS)		29	DM	0 0 7 Ton
2.				
3.				
4.				
13. Special Handling Instructions and Additional Information 1. 111054OR: Drill Cuttings, Well Deconstruction Debris: ERG# N/A Box 389-9 / Box 391-9				
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.				
Generator's/Offoror's Printed/Typed Name SARAH POWELL		Signature Sarah Powell		Month Day Year 3 7 13
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:				
16. Transporter Acknowledgment of Receipt of Materials				
Transporter 1 Printed/Typed Name Keith Thurston		Signature Keith Thurston		Month Day Year 3 7 13
Transporter 2 Printed/Typed Name		Signature		Month Day Year
17. Discrepancy				
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection				
17b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number				
17c. Signature of Alternate Facility (or Generator) Month Day Year				
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a				
Printed/Typed Name		Signature		Month Day Year

GENERATOR

TRANSPORTER INT'L

DESIGNATED FACILITY



Hillsboro Landfill, Inc
 3205 SE Minter Bridge
 Hillsboro, OR, 97123
 Ph: (503)-640-9427

Original
 Ticket# 1311927

Customer Name	PROWELLENV PROWELL ENVIRONMEN	Carrier	WEST COAST MARINE	WEST COAST MARINE
Ticket Date	03/07/2013	Vehicle#	123	Volume
Payment Type	Credit Account	Container		
Manual Ticket#		Driver	keith	
Hauling Ticket#		Check#		
Route		Billing #	0002077	
State Waste Code		Gen EPA ID	N/A	
Manifest	na			
Destination		Grid		
PO	111054OR			
Profile	111054OR (DRILL CUTTINGS, WELL DECONSTRUCTION DEBRIS)			
Generator	OR-CASCADE CORP CASCADE CORP			

	Time	Scale	Operator	Inbound	Gross	
In	03/07/2013 11:54:59	Inbound 2	jdb		Tare	56820 lb
Out	03/07/2013 12:54:29	Outbound	ajm		Net	44540 lb
					Tons	12280 lb
						6.14

Comments

Consumer Comments? We want to know. Please call.

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Cont Soil Pet-RGC-	100	6.14	Tons	82.20		\$504.71	MULT-IN
2 13% FEA-13% FEA FE	100		%	13.00		\$65.61	MULT-IN
3 UNLOAD-Unload fee	100	1	Load	300.00		\$300.00	MULT-IN

Keith

Total Tax
 Total Ticket \$870.32

Driver's Signature



From: [Castner, Kristin](#)
To: [Sarah Prowell](#)
Subject: RE: Cascade Corporation-additional well deconstruction waste-#110540R
Date: Tuesday, March 05, 2013 9:51:54 AM
Attachments: [111054or.doc](#)

All looks good.

Thank you,

Kristin Castner
Waste Management

Waste Approvals Manager
Pacific Northwest, Hawaii, Alaska
Phone: 503-493-7834
Fax: 800-569-1764

Interesting WM Fact:

Waste Management's renewable energy projects create enough energy to power over 1 million homes

Visit our website at WWW.WMSOLUTIONS.COM

From: Sarah Prowell [mailto:sprowell@ix.netcom.com]
Sent: Tuesday, March 05, 2013 9:41 AM
To: Castner, Kristin
Subject: Cascade Corporation-additional well deconstruction waste-#110540R

Hello Kristin,

On behalf of Cascade Corporation, Prowell Environmental is requesting Waste Management's authorization to manage additional well deconstruction waste that was generated during 4Q12 well decommissionings, per Oregon DEQ approval.

The waste consists of well deconstruction sand, bentonite, grout, pvc casing pieces, concrete, limited soil material, and sorbent litter material. It is contained in 31 55-gallon, labeled, DOT approved drums with sealed (but openable) lids. The drums are free of liquid water.

The drummed waste was sampled using field composite sampling methods. Waste sample material was collected using a clean stainless steel trowel from depths of 6 to 12 inches below the top of drummed waste. Sample material collected from 4 to 5 drums and placed and firmly tamped to fill completely a total of 8 laboratory-prepared sampling containers for composite waste sample analysis of VOCs using EPA Method 8260b. Copies of ALS Environmental laboratory's reports for these samples are attached, confirming no detectable presence of VOCs.

Based on non-detectable sample results, we seek Waste Management's approval to dispose of the waste as non-hazardous special waste at Hillsboro Landfill under existing Profile # 111054OR.

We appreciate your review of this request.

Sincerely,

Sarah Prowell, R.G.

Prowell Environmental, Inc.

Portland, Oregon 97239

Phone: 503/452-0972

sprowell@ix.netcom.com

Recycling is a good thing. Please recycle any printed emails.