AECOM
710 2nd Avenue, Suite 1000
Seattle, WA 98104

206.624.9349 tel
206.623.3793 fax

December 11, 2014

Mr. Jason Shira
Department of Ecology
Central Regional Office
15 West Yakima Avenue, Suite 200
Yakima, WA 98902-3452

Subject: Semi-Annual Groundwater Monitoring Report for the Yakima Valley Spray/U-Haul Facility – September 2014 Semi-Annual Sampling Event

Dear Mr. Shira:

This letter report is submitted on behalf of the Yakima Valley Spray Site Remediation Group (YVSSRG) pursuant to the Consent Decree providing for remedial action at the Yakima Valley Spray/ U-Haul Facility (site). The Consent Decree was entered in the State of Washington, Department of Ecology (Ecology) v. INW Company, et al., Yakima County Superior Court Case No. 04-2-00908-1 (March 18, 2004).

The September 2014 semi-annual groundwater sampling event was conducted from September 16, 2014 through September 17, 2014. This was the fourth and final sampling event required by the revised Compliance Monitoring Plan (CMP) (AECOM 2013[1]). This report documents and discusses the groundwater monitoring network and field and laboratory groundwater monitoring results from this sampling event. Conclusions and next steps are also provided. The attached tables and figure present the groundwater monitoring data and potentiometric surface map for September 2014.

Groundwater Monitoring Network

The groundwater monitoring network consists of background wells, sentry wells, and compliance wells, as outlined in the revised CMP. The groundwater monitoring network includes 3 background wells (BG-60, BG-90, and MW-12), 2 sentry wells (YVS-1b and YVS-2), and 5 compliance wells (YS-1, MW-6, YVS-3, YVS-3-60, and YVS-3-90), for a total of 10 wells. Background well MW-12 is located on the Nissan property to the north. The other wells are located within Operable Unit 1 (OU1) on the INW property. Background well YS-3 and sentry wells MW-10 and MW-11 are within Operable Unit 2 (OU2) on BNSF property and are no longer part of the groundwater monitoring network.[2]

---

[1] AECOM 2013. Letter RE: *Yakima Valley Spray/U-Haul Site (Facility Site ID No. 445) – Compliance Monitoring Plan*. AECOM, Seattle, WA. February 8, 2013.

[2] ENSR 2008. Letter RE: *Yakima Valley Spray Site – Confirming Compliance Monitoring Plan Changes*. ENSR, Seattle, WA. October 27, 2008.

All monitoring wells within the groundwater monitoring network were inspected as part of the sampling event to evaluate their condition. The well inspection found that:

- MW-6 was damaged during the June 2008 on-site construction and remains damaged. The well casing appears to be broken or bent at 8.1 feet below ground surface (bgs). However, the dedicated tubing remains intact. This well continues to be sampled, but the water level cannot be gauged.
- All other wells were fully functional and operational.

In addition to all wells within the groundwater monitoring network, two other wells, MW-8 and MW-9, were gauged to provide ongoing information on groundwater flow direction. Gauging data from the September 2014 sampling event are presented in Table 1 and the potentiometric surface map is shown in Figure 1. The potentiometric surface map is based on limited data from the western portion of the site due to the damage to MW-6 and the discontinuation of gauging at YS-3, MW-10, and MW-11 within OU2.

A total of 16 wells are at the site (Table 1). Twelve are shallow wells that extend between 25 and 30 feet bgs. The other 4 wells are deep and extend to either 60 or 90 feet bgs. The deeper wells are clustered with well screen depths separated by at least 7 feet horizontally. Wells BG-60 and BG-90 are clustered together as background wells, while wells YVS-3-60 and YVS-3-90 are clustered with YVS-3 (a 28-foot deep well) as compliance wells.

Tetrachloroethene (PCE) Cleanup Level

The site is located within the Yakima Railroad Area, a 6-square-mile area designated by Ecology in which the groundwater is contaminated with PCE. As described in the CMP (RETEC 2003a[3]), compliance with cleanup levels for PCE on the site will be achieved as long as sampling indicates that on-site wells contain PCE at concentrations less than background. The background concentration/site-specific cleanup level for PCE is typically calculated once every four sampling events; the PCE background concentration was reviewed and updated during this reporting period.

According to the CMP, PCE concentrations from the current compliance wells are compared to the PCE cleanup level. The PCE cleanup level is the background PCE concentration, which is calculated from the historical background PCE data set obtained from the background wells at the site (YS-3, MW-12, BG-60, and BG-90 (Table 2)). The background PCE concentration is determined according to the procedure outlined in section 4.4 of the Washington State Department of Ecology's *Statistical Guidance for Ecology Site Managers* (August, 1992). The background PCE concentration is calculated as the lower of:

1. the 90^{th} percentile or 4 * 50^{th} percentile for lognormally distributed data, or
2. the 80^{th} percentile or 4 * 50^{th} percentile for normally distributed data

However, if the data do not follow a prescribed distribution (i.e., are non-parametric), then the 1992 *Guidance* Example 5 (Section 2.1.2.3) indicates that the background PCE concentration is the 90^{th} percentile of the sorted (ranked) data.

The background data was collected from September 2004 through September 2014 for wells MW-12, BG-60, and BG-90, and from November 2003 through September 2008 for well YS-3. The background data set was neither normally nor log-normally distributed as determined by the Shapiro-Wilks W-test (Table 2) when non-detect values were adjusted to ½ the detection limit. The data also were not normally

[3] RETEC, 2003a. *Groundwater Compliance Monitoring Plan, Yakima Valley Spray/U-Haul Site, Yakima, Washington*. The RETEC Group, Inc., Seattle, WA. October 16, 2003.

nor log-normally distributed when the non-detect values were estimated using regression on order statistics (ROS; ProUCL, 2007). Therefore, the background PCE data is non-parametric, and the background PCE concentration was calculated as the 90th percentile of the sorted data, as recommended in the 1992 *Guidance*. The 90th percentile value for background PCE concentrations is 23.9 µg/L, which is slightly lower than the previously calculated background concentration of 24.2 µg/L.

Groundwater Sampling Methods

The monitoring wells were sampled in accordance with the *Focused Groundwater Sampling and Analysis Plan* (SAP; RETEC 2003b[4]) approved by Ecology. Prior to sampling, water level measurements were collected from all functional wells on site. The background, sentry, and compliance wells were sampled using the low-flow sampling method.[5] The low-flow sampling method decreases turbidity associated with other sampling methods and gives a more accurate assessment of the dissolved constituent concentrations due to the reduction in disturbance of the water column during sampling. Dedicated QED Well Wizard sampling pumps and sampling tubing were used. The pump inlet for the dedicated pumps was placed at approximately the midway point between the measured groundwater level and the bottom of the screen for wells that screen the water table. The pump inlet was placed midway along the screen interval in wells in which the screen does not intercept the water table.

Following adjustment of the pump inlet to the required elevation, each monitoring well was purged at a rate less than 300 mL/min. As required with the low-flow sampling technique, turbidity, dissolved oxygen, and oxidation-reduction potential in the groundwater were monitored during purging of each well. The pH, specific conductivity, and temperature were also monitored. Purge volumes were based on obtaining stability, as determined by having consecutive measurements at least three minutes apart that were within ten percent of the previous measurement, except for conductivity, which should be within three percent. Upon stabilization of the parameters, the pumping rate was reduced to approximately 200 mL/min to collect samples. The samples were collected from the discharge tube of the pump into the appropriate sample containers and chilled in a cooler. Then, the samples were shipped to Pace Analytical in Minneapolis, Minnesota under chain-of-custody procedures. The field sampling forms are included in Attachment A.

Groundwater samples from all wells within the monitoring network (BG-60, BG-90, MW-12, YVS-1b, YVS-2, YS-1, YVS-3, YVS-3-60, YVS-3-90, and MW-6) were analyzed for tetrachloroethylene (PCE), and groundwater samples from YVS-1b, YVS-2, YS-1, YVS-3, and MW-6 were also analyzed for arsenic, benzene, and gasoline range hydrocarbons[6], as specified in the revised CMP Letter to Ecology (AECOM 2013) and approved by Ecology in February 2013 (Ecology 2013[7]). The laboratory analytical report and data validation report are included in Attachment B.

---

[4] RETEC 2003b. *Focused Groundwater Sampling and Analysis Plan, Yakima Valley Spray (U-Haul) Site, Yakima, Washington*. The RETEC Group, Inc., Seattle, WA. October 2003.

[5] EPA 1996. *Ground Water Issue, Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures*. April 1996.

[6] Ecology required continued monitoring of PCE to address PCE present in wells at concentrations above human health standards immediately adjacent to property not covered under a groundwater restrictive covenant. Also, Ecology required continued monitoring of arsenic, benzene, and gasoline range organics to verify that these indicator hazardous substances (IHS) are not present at the property boundary.

[7] Ecology, 2013. Letter RE: *Yakima Valley Spray/U-Haul Site Compliance Monitoring Plan Facility/Site ID No. 445*. Washington State Department of Ecology. February 28, 2013.

Groundwater Sampling Results

The groundwater sampling results from September 2004 through September 2014 are presented in Table 2 and Table 3. During the September 2014 sampling event, a blind field duplicate sample was collected from YVS-2 (YVS-20-0914) in accordance with the SAP. Since both the parent (YVS-2-0914) and duplicate (YVS-20-0914) sample results are valid concentrations of contaminants in the well, the average concentration of the two sample results is used for comparison to the applicable cleanup levels. For non-detect results, one-half of the reporting limit is used to calculate the average concentration.

Tetrachloroethylene (PCE)

PCE concentrations at one background well (MW-12 at 36.9 µg/L), one sentry well (YVS-1b at 30.3 µg/L), and one compliance well (YVS-3-60 at 32.2 µg/L) exceeded the updated PCE background concentration (cleanup level) of 23.9 µg/L during the September 2014 sampling event. No other samples exceeded the PCE cleanup level, but concentrations at several other wells were elevated as compared to concentrations over the past 6 years. Two of the background wells (MW-12 and BG-60) had the highest concentrations ever detected, indicating a likely area wide or offsite source is responsible for the anomalous PCE concentration. This is the first time since 2008 that a sentry or compliance well exceeded the PCE cleanup level, and the first time since 2009 that a background well exceeded that PCE cleanup level. The PCE exceedances at sentry well YVS-1b and compliance well YVS-3-60 were both below the PCE concentration at background well MW-12, indicating the site is not contributing PCE to the system. Therefore, the site should be considered to be in compliance for PCE concentrations.

Arsenic, Benzene, and Gasoline Range Hydrocarbons

There were no arsenic, benzene, or gasoline range hydrocarbon cleanup level exceedances during the September 2014 sampling event. Site-specific cleanup levels for arsenic, benzene, and gasoline range hydrocarbons are based on MTCA Method A cleanup levels for groundwater.

Arsenic was detected in groundwater at sentry well YVS-1b at a concentration of 0.8 µg/L, which is consistent with results from previous sampling events and well below the site-specific cleanup level of 5 µg/L. Arsenic was not detected in the second sentry well (YVS-2). Benzene and gasoline range hydrocarbons were not detected in either sentry well, and detections limits were below the site-specific cleanup levels.

There were no exceedances of site-specific cleanup levels in the compliance wells during the September 2014 sampling event, and only one detection for arsenic at well YS-1 (0.58 µg/L). All other results for arsenic, benzene, and gasoline range hydrocarbons were not detected in groundwater from the compliance wells, and detection limits were all below the site-specific cleanup levels.

Conclusions

Arsenic, benzene, and gasoline range hydrocarbon concentrations in groundwater from all background, sentry, and compliance wells were either not detected or were detected at concentrations less than site-specific cleanup levels. This is the 17th event (since September 2006) that concentrations for arsenic, benzene, and gasoline range hydrocarbons have been below site-specific cleanup levels at the compliance wells.

PCE concentrations at background well MW-12, sentry well YVS-1b, and compliance well YVS-3-60 exceeded the site-specific cleanup level (23.9 µg/L). This is the first time since September 2008 that a sentry or compliance well exceeded the PCE cleanup level; the September 2008 exceedances also corresponded with a background well exceedance. Given this data and the generally elevated PCE concentrations throughout the monitoring well network, it is reasonable to conclude that the September

2014 results (and previous compliance well exceedances) represent a broader, area wide PCE issue, and that the site is not contributing to the overall PCE concentrations in the area.

Next Steps

As previously reported, site boundary compliance monitoring well data did not meet the statistical criteria for attaining cleanup levels after six years of monitoring. The YVSSRG determined that continued performance monitoring was necessary to verify that cleanup levels have been attained and that the site is able to enter into confirmational monitoring.[8] Two years of additional performance monitoring were proposed by the YVSSRG (and agreed to by Ecology) to reach the confirmational monitoring transition. This September 2014 event marks the fourth and final sampling event of the additional monitoring period.

YVSSRG is proposing that following this final sampling event and report, the site move to the confirmation monitoring phase. Over 20 performance monitoring events have occurred since September 2004. There have been no compliance well exceedances of arsenic, benzene and gasoline range hydrocarbons since September 2006 (17 events), and only one exceedance for PCE (since 2008) which corresponded with even higher level concentrations in background wells. YVSSRG proposes that 2 years of confirmation monitoring (4 events total) be conducted on a semi-annual basis for PCE in background and compliance wells.

Following Ecology's approval, YVSSRG will prepare a revised CMP to document the proposed changes to the compliance monitoring program and submit it to Ecology for review. YVSSRG is happy to meet with Ecology to review the recent data and discuss the proposed revisions to the CMP prior to submittal.

Should you have any questions or concerns about the information presented in this letter report or the proposed revisions to the CMP, please call Halah Voges at (206) 903-3303.

Sincerely yours,

Halah Voges, P.E.
Project Director

Jason Palmer
Project Manager

[8] Confirmational monitoring is required after performance monitoring to assess the long-term effectiveness of the remedy. The frequency and duration of the confirmational monitoring will be determined with Ecology at a later date.

Attachments:

Table 1	Groundwater Elevation Data
Table 2	PCE Results at BG-60, BG-90, MW-12, and YS-3
Table 3	Indicator Hazardous Substances in Groundwater – OU1 and Nissan Property
Figure 1	Potentiometric Surface Map Shallow Wells September 2014
Attachment A	Field Forms
Attachment B	Laboratory Analytical Results and Data Validation Report

cc: Jennifer Sanscrainte – Short Cressman & Burgess
Larry Hine – INW
Carol Campagna – Shell
Fred Wolf – Legacy Site Services LLC
Mark Brearley – Chevron Environmental Management Company
AECOM File

Tables

Table 1 Groundwater Elevation Data

Type of Well	Location	Deep / Shallow Well	Measuring Point Elevation (ft.)	September 2014	
				Depth to Water (ft.)	Water Elevation (ft.)
Background	BG-60	Deep	1044.92	16.74	1028.18
	BG-90	Deep	1044.74	18.67	1026.07
	MW-12	Shallow	1043.13	12.92	1030.21
	YS-3 [3]	Shallow	1048.74	NM	--
Sentry	YVS-1b	Shallow	1040.94	11.45	1029.49
	YVS-2	Shallow	1040.78	11.25	1029.53
	MW-10 [3]	Shallow	1044.09	NM	--
Compliance	YS-1	Shallow	1040.56	14.65	1025.91
	MW-6 [2]	Shallow	1040.82	NM	--
	YVS-3	Shallow	1041.01	12.44	1028.57
	YVS-3-60	Deep	1041.26	15.50	1025.76
	YVS-3-90	Deep	1041.26	19.75	1021.51
Other	MW-5 [1]	Shallow	1042.10	NM	--
	MW-8	Shallow	1041.35	13.12	1028.23
	MW-9	Shallow	1040.07	14.79	1025.28
	MW-11 [3]	Shallow	1045.88	NM	--
	YS-2	Shallow	1040.33	14.17	1026.16

Notes:

1. MW-5 has been abandoned.
2. MW-6 has been damaged and water level meter cannot be extended deeper than 8.1 feet bgs.
3. Wells on OU2 previously gauged by GeoEngineers. They are no longer subject to required gauging.

NM - Not measured

Vertical Datum: NGVD 29

Table 2 PCE Results at BG-60, BG-90, MW-12 and YS-3

Location ID	Sample ID	Sample Date	PCE Concentration (µg/L)
BG-60	BG-60-0904	9/1/2004	**29.8**
BG-60	BG-60-1204	12/7/2004	**26.1**
BG-60	BG-60-0305	3/24/2005	**22.7**
BG-60	BG-60-0605	6/15/2005	**24.4**
BG-60	BG-60-0905	9/27/2005	**20.1**
BG-60	BG-60-1205	12/12/2005	*12.5*
BG-60	BG-60-0306	3/15/2006	**20**
BG-60	BG-60-0606	6/15/2006	**20.7**
BG-60	BG-60-0906	9/13/2006	**21.3**
BG-60	BG-60-1206	12/29/2006	**21**
BG-60	BG-60-0507	5/11/2007	**19.7**
BG-60	BG-60-0408	4/10/2008	**18.8**
BG-60	BG-60-0608	6/9/2008	**17.7**
BG-60	BG-60-0908	9/16/2008	**23.3**
BG-60	BG-60-0109	1/7/2009	**24.5**
BG-60	BG-60-0309	3/18/2009	**20.3**
BG-60	BG-60-0609	6/16/2009	**9.5**
BG-60	BG-60-0909	9/9/2009	**15**
BG-60	BG-60-1209	12/1/2009	**22.6**
BG-60	BG-60-0310	3/1/2010	**13.1**
BG-60	BG-60-0610	6/1/2010	**17.2**
BG-60	BG-60-0910	9/1/2010	**17.9**
BG-60	BG-60-0313	3/20/2013	**19**
BG-60	BG-60-0913	9/10/2013	**16.4**
BG-60	BG-60-0314	3/26/2014	**17.8**
BG-60	BG-60-0914	9/16/2014	**21.4**
BG-90	BG-90-0904	9/1/2004	*0.5*
BG-90	BG-90-1204	12/7/2004	*2.5*
BG-90	BG-90-0305	3/24/2005	*2.5*
BG-90	BG-90-0605	6/15/2005	*2.5*
BG-90	BG-90-0905	9/27/2005	*2.5*
BG-90	BG-90-1205	12/12/2005	*12.5*
BG-90	BG-90-0306	3/15/2006	*0.5*
BG-90	BG-90-0606	6/15/2006	**0.83**
BG-90	BG-90-0906	9/13/2006	**0.81**
BG-90	BG-90-1206	12/29/2006	**0.95**
BG-90	BG-90-0507	5/11/2007	*2.5*
BG-90	BG-90-0408	4/10/2008	**1.37**
BG-90	BG-90-0608	6/9/2008	**1.17**
BG-90	BG-90-0908	9/16/2008	**1.41**
BG-90	BG-90-0109	1/7/2009	**1.46**
BG-90	BG-90-0309	3/18/2009	**1.41**
BG-90	BG-90-0609	6/16/2009	*0.5*
BG-90	BG-90-0909	9/9/2009	**1.2**
BG-90	BG-90-1209	12/1/2009	**2**
BG-90	BG-90-0310	3/1/2010	**2.1**
BG-90	BG-90-0610	6/1/2010	**1.8**
BG-90	BG-90-0910	9/1/2010	**1.8**
BG-90	BG-90-0313	3/20/2013	**3.5**
BG-90	BG-90-0913	9/10/2013	**2.8**
BG-90	BG-90-0314	3/26/2014	**3.5**
BG-90	BG-90-0914	3/27/2014	**3.6**

Location ID	Sample ID	Sample Date	PCE Concentration (µg/L)
MW-12	MW-12-0904	9/1/2004	**23**
MW-12	MW-12-1204	12/8/2004	**13.7**
MW-12	MW-12-0305	3/24/2005	**6.76**
MW-12	MW-12-0605	6/16/2005	**17.8**
MW-12	MW-12-0905	9/27/2005	**25.2**
MW-12	MW12-1205	12/13/2005	*12.5*
MW-12	MW-12-0306	3/14/2006	**6.22**
MW-12	MW-12-0606	6/14/2006	**11.9**
MW-12	MW-12-0906	9/12/2006	**15.2**
MW-12	MW-12-1206	12/29/2006	**9.06**
MW-12	MW-12-0507	5/10/2007	**5.66**
MW-12	MW-12-0408	4/10/2008	**10.5**
MW-12	MW-12-0608	6/9/2008	**8.72**
MW-12	MW-12-0908	9/15/2008	**26.4**
MW-12	MW-12-0109	1/6/2009	**7.69**
MW-12	MW-12-0309	3/17/2009	**7.25**
MW-12	MW-12-0609	6/16/2009	**3.8**
MW-12	MW-12-0909	9/9/2009	**20**
MW-12	MW-12-1209	12/1/2009	**7.5**
MW-12	MW-12-0310	3/1/2010	**5.7**
MW-12	MW-12-0610	6/1/2010	**6.3**
MW-12	MW-12-0910	9/1/2010	**23.2**
MW-12	MW-12-0313	3/20/2013	**6.9**
MW-12	MW-12-0913	9/10/2013	**17.9**
MW-12	MW-12-0314	3/26/2014	**4**
MW-12	MW-12-0914	9/16/2014	**36.9**
YS-3	YS-3-1103	11/19/2003	**15.4**
YS-3	YS-3-0904	9/1/2004	**26.8**
YS-3	YS-3-1204	12/8/2004	**14.4**
YS-3	YS-3-0305	3/24/2005	**6.65**
YS-3	YS-3-0605	6/16/2005	**12.4**
YS-3	YS-3-0905	9/28/2005	**25.7**
YS-3	YS-3-1205	12/13/2005	**12.7**
YS-3	YS-3-0306	3/14/2006	**7.38**
YS-3	YS-3-0606	6/15/2006	**8.44**
YS-3	YS-3-0906	9/13/2006	**21.7**
YS-3	YS-3-1206	12/28/2006	**14.0**
YS-3	YS-3-0507	5/10/2007	**6.6**
YS-3	YS-3-0907	9/5/2007	**12.7**
YS-3	YS-3-1207	12/17/2007	**16**
YS-3	YS-3-0308	3/11/2008	**6.7**
YS-3	YS-3-0608	6/9/2008	**6.33**
YS-3	YS-3-0908	9/15/2008	**27.3**

Notes:

1. YS-3 sample and field duplicate results from 9/5/2007 were averaged.
2. Non-bold and italicized values are non-detects, and represent one-half the detection limit.
3. September 2014 PCE Statistical Calculations using one-half the detection limits for non-detects:

Shapiro-Wilks W Test	W value	Probability
Normal	0.907	0.00
Log-Normal	0.882	0.00
Data Distribution	Non-Parametric	

90th Percentile	23.9	µg/L

PCE Background Cleanup Level	23.9	µg/L

Table 3 Indicator Hazardous Substances in Groundwater – OU1 and Nissan Property

Location ID	Sample ID	Month Year	Sample Type	Chemical Name Unit Cleanup Level	Tetrachloro-ethylene µg/L 23.9	Arsenic µg/L 5	Benzene µg/L 5	4,4'-DDT µg/L 0.3	Aldrin µg/L	beta-BHC µg/L	Dieldrin µg/L	gamma-BHC (Lindane) µg/L	Gasoline Range Hydrocarbons µg/L 800	Diesel Range Hydrocarbons µg/L	Diesel Range Hydrocarbons w/SG µg/L	Motor Oil Range Hydrocarbons µg/L	Motor Oil Range Hydrocarbons w/SG µg/L	Total D + MO Range Hydrocarbons (Calculated) µg/L 500	Total D + MO Range Hydrocarbons w/SG (Calculated) µg/L 500	Fecal Coliform CFU/100 mL NA	N-Ammonia mg/L NA	Nitrogen, NO_2 plus NO_3 mg/L NA	Total Dissolved Solids mg/L NA
Background																							
BG-60																							
BG-60	BG-60-0904	Sep 2004			**29.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-1204	Dec 2004			**26.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0305	Mar 2005			**22.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0605	Jun 2005			**24.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0905	Sep 2005			**20.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-1205	Dec 2005		< 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0306	Mar 2006			**20**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0606	Jun 2006			**20.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0906	Sep 2006			**21.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-1206	Dec 2006			**21**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0507	May 2007			**19.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0408	Apr 2008			**18.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0608	Jun 2008			**17.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0908	Sep 2008			**23.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0109	Jan 2009			**24.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0309	Mar 2009			**20.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0609	Jun 2009			**9.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0909	Sep 2009			**15**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-1209	Dec 2009			**22.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0310	Mar 2010			**13.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0610	Jun 2010			**17.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0910	Sep 2010			**17.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0313	Mar 2013			**19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**3.7**	NA
BG-60	BG-60-0913	Sep 2013			**16.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0314	Mar 2014			**17.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-60	BG-60-0914	Sep 2014			**21.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90																							
BG-90	BG-90-0904	Sep 2004		< 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-1204	Dec 2004		< 5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0305	Mar 2005		< 5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0605	Jun 2005		< 5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0905	Sep 2005		< 5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-1205	Dec 2005		< 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0306	Mar 2006		< 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0606	Jun 2006			**0.83**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0906	Sep 2006			**0.81**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-1206	Dec 2006			**0.95**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0507	May 2007		< 5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0408	Apr 2008			**1.37**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0608	Jun 2008			**1.17**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0908	Sep 2008			**1.41**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0109	Jan 2009			**1.46**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0309	Mar 2009			**1.41**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0609	Jun 2009		< 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0909	Sep 2009			**1.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-1209	Dec 2009			**2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0310	Mar 2010			**2.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0610	Jun 2010			**1.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0910	Sep 2010			**1.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0313	Mar 2013			**3.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**2.9**	NA
BG-90	BG-90-0913	Sep 2013			**2.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0314	Mar 2014			**3.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG-90	BG-90-0914	Sep 2014			**3.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12																							
MW-12	MW-12-0904	Sep 2004			**23**	< 1	< 1	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	< 50	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA
MW-12	MW-12-1204	Dec 2004			**13.7**	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 500	NA	< 500	NA	< 500	NA	NA	NA	NA	NA
MW-12	MW-12-0305	Mar 2005			**6.76**	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
MW-12	MW-12-0605	Jun 2005			**17.8**	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
MW-12	MW-12-0905	Sep 2005			**25.2**	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
MW-12	MW12-1205	Dec 2005		< 25		< 1	< 5	< 0.288	< 0.0769	< 0.192	< 0.0769	< 0.192	< 50	< 243	NA	< 243	NA	< 243	NA	NA	NA	NA	NA
MW-12	MW-12-0306	Mar 2006			**6.22**	< 1	< 1	< 0.286	< 0.0762	< 0.19	< 0.0762	< 0.19	< 50	< 240	NA	< 240	NA	< 240	NA	NA	NA	NA	NA
MW-12	MW-12-0606	Jun 2006			**11.9**	**1**	< 0.5	< 0.0777	< 0.0777	< 0.0388	< 0.0777	< 0.0388	< 50	< 253	NA	< 253	NA	< 253	NA	NA	NA	NA	NA
MW-12	MW-12-0906	Sep 2006			**15.2**	**1.12**	< 0.5	< 0.286	< 0.0714	< 0.19	< 0.0714	< 0.19	< 50	< 245	NA	< 490	NA	< 367.5	NA	NA	NA	NA	NA
MW-12	MW-12-1206	Dec 2006			**9.06**	< 1	< 0.5	< 0.0762	< 0.0762	< 0.0381	< 0.0762	< 0.0381	< 50	< 238	NA	< 238	NA	< 238	NA	NA	NA	NA	NA
MW-12	MW-12-0507	May 2007			**5.66**	**1.09**	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-12	MW-12-0408	Apr 2008			**10.5**	**1.15**	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 800	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-12	MW-12-0608	Jun 2008			**8.72**	**1.11**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-12	MW-12-0908	Sep 2008			**26.4**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-12	MW-12-0109	Jan 2009			**7.69**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	MW-12-0309	Mar 2009			**7.25**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-12	MW-12-0609	Jun 2009			**3.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	MW-12-0909	Sep 2009			**20**	< 2	< 1	< 0.019 UJ	< 0.0094 UJ	< 0.019 UJ	< 0.019 UJ	< 0.0094 UJ	< 50	< 120	NA	< 240	NA	< 180	NA	NA	NA	NA	NA
MW-12	MW-12-1209	Dec 2009			**7.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	MW-12-0310	Mar 2010			**5.7**	**0.92**	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	< 50	< 75	NA	< 380	NA	< 227.5	NA	NA	NA	NA	NA
MW-12	MW-12-0610	Jun 2010			**6.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	MW-12-0910	Sep 2010			**23.2**	**0.82**	< 1	< 0.1	< 0.05	< 0.05	< 0.1	< 0.05	< 50	< 76	NA	< 380	NA	< 228	NA	NA	NA	NA	NA

Table 3 Indicator Hazardous Substances in Groundwater – OU1 and Nissan Property

Location ID	Sample ID	Month Year	Sample Type	Chemical Name	Tetrachloro-ethylene	Arsenic	Benzene	4,4'-DDT	Aldrin	beta-BHC	Dieldrin	gamma-BHC (Lindane)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Diesel Range Hydrocarbons w/SG	Motor Oil Range Hydrocarbons	Motor Oil Range Hydrocarbons w/SG	Total D + MO Range Hydrocarbons (Calculated)	Total D + MO Range Hydrocarbons w/SG (Calculated)	Fecal Coliform	N-Ammonia	Nitrogen, NO_2 plus NO_3	Total Dissolved Solids
				Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	CFU/100 mL	mg/L	mg/L	mg/L
				Cleanup Level	23.9	5	5	0.3					800					500	500	NA	NA	NA	NA
MW-12																							
MW-12	MW-12-0313	Mar 2013			**6.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**1.6**	NA
MW-12	MW-12-0913	Sep 2013			**17.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	MW-12-0314	Mar 2014			**4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	MW-12-0914	Sep 2014			**36.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sentry																							
YVS-1																							
YVS-1	YVS-1-0904	Sep 2004			**14.4**	**2.8**	< 1	< 0.08	< 0.08	< 0.04	< 0.08	**0.0437**	< 50	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA
YVS-1	YVS-1-1204	Dec 2004			**14.8**	**5.46**	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**55.3**	< 500	NA	< 500	NA	< 500	NA	NA	NA	NA	NA
YVS-1	YVS-1-0305	Mar 2005		<	5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**89.5**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-1	YVS-1-0605	Jun 2005			**5.28**	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-1	YVS-1-0905	Sep 2005			**15.5**	**1.92**	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-1	YVS-1-1205	Dec 2005		<	25	**1.57**	< 5	< 0.288	< 0.0769	< 0.192	< 0.0769	< 0.192	< 50	< 240	NA	< 240	NA	< 240	NA	NA	NA	NA	NA
YVS-1	YVS-1-0306	Mar 2006			**3.29**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**78.4**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1	YVS-1-0606	Jun 2006			**6.5**	**1.31**	< 0.5	< 0.0777	< 0.0777	< 0.0388	< 0.0777	< 0.0388	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-1B																							
YVS-1B	YVS-16-0408	Apr 2008			**1.86**	**2.58**	< 5	< 0.283	< 0.0755	< 0.189	**0.0847**	< 0.189	< 800	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-16-0608	Jun 2008			**1.91**	**2.58**	**1.86**	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**1,800**	< 236 J	NA	< 236 J	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0908	Sep 2008			**27.2**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-10b-0109	Jan 2009	Duplicate		**3.56**	**1.41**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**2,400**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0109	Jan 2009	Parent		**3.2**	**1.41**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**2,080** J	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0109	Jan 2009	Average		**3.38**	**1.41**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**2,240** J	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-18-0309	Mar 2009	Duplicate		**2.38**	**1.35**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**1,990**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0309	Mar 2009	Parent		**2.29**	**1.33**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**1,920**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0309	Mar 2009	Average		**2.34**	**1.34**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**1,955**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-10b-0609	Jun 2009	Duplicate	<	1	**2.11**	< 1	NA	NA	NA	NA	NA	**1,060**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0609	Jun 2009	Parent	<	1	**2.24**	< 1	< 0.28	< 0.076	< 0.19	< 0.076	< 0.19	**1,210**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0609	Jun 2009	Average	<	1	**2.175**	< 1	< 0.28	< 0.076	< 0.19	< 0.076	< 0.19	**1,135**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0909	Sep 2009			**17**	< 2	< 1	**0.04**	< 0.0094	< 0.019	**0.044**	< 0.0094	< 50	< 120	NA	< 240	NA	< 180	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-1209	Dec 2009			**3.2**	< 0.5	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	**1,190**	**780**	NA	**490**	NA	**1,270**	NA	NA	NA	NA	NA
YVS-1B	YVS-1A-0310	Mar 2010	Duplicate		**1.9**	**0.88**	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	**778**	**1,100**	NA	**620**	NA	**1,720**	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0310	Mar 2010	Parent		**1.9**	**0.86**	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	**757**	**1,000**	NA	**570**	NA	**1,570**	NA	NA	NA	NA	NA
YVS-1B	YVS-1A-0310	Mar 2010	Average		**1.9**	**0.87**	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	**767.5**	**1,050**	NA	**595**	NA	**1,645**	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0610	Jun 2010			**1**	**1.8**	**1.4**	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	**633**	**1,300**	NA	**480**	NA	**1,780**	NA	NA	NA	NA	NA
YVS-1B	YVS-1b-0910	Sep 2010			**16.8**	< 0.5	< 1	**0.0752** J	< 0.05	< 0.05	< 0.1	< 0.05	< 100	**77**	< 76	< 380	< 380	**267**	< 228	NA	NA	NA	NA
YVS-1B	YVS-1B-0313	Mar 2013	Parent		**1.1**	< 0.5	**2.4**	NA	NA	NA	NA	NA	**698**	NA	NA	NA	NA	NA	NA	< 1.0	**1.65**	< 0.1	**2,010**
YVS-1B	YVS-10B-0313	Mar 2013	Duplicate		**1.1**	< 0.5	**2.4**	NA	NA	NA	NA	NA	**614**	NA	NA	NA	NA	NA	NA	< 1.0	**1.35**	< 0.1	**2,050**
YVS-1B	YVS-10B-0313	Mar 2013	Average		**1.1**	< 0.5	**2.4**	NA	NA	NA	NA	NA	**656**	NA	NA	NA	NA	NA	NA	< 1.0	**1.5**	< 0.1	**2,030**
YVS-1B	YVS-1B-0913	Sep 2013	Parent		**19.3**	**0.7**	< 1	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-1B	YVS-10B-0913	Sep 2013	Duplicate		**19.5**	**0.7**	< 1	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-1B	YVS-1B-0913	Sep 2013	Average		**19.4**	**0.7**	< 1	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-1B	YVS-1B-0314	Mar 2014		<	1.0	**1.0**	**4.4**	NA	NA	NA	NA	NA	**1,040**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-1B	YVS-1B-0914	Sep 2014			**30.3**	**0.8**	< 1	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-2																							
YVS-2	YVS-2-0904	Sep 2004			**15.2**	< 1	< 1	< 0.08	< 0.08	< 0.04	< 0.08	**0.0607**	< 50	< 325	NA	< 649	NA	< 487	NA	NA	NA	NA	NA
YVS-2	YVS-2-1204	Dec 2004			**8.92**	**13.1**	**6.58**	< 0.3	< 0.08	< 0.2	< 0.08	**0.43**	**1,470**	**510**	NA	< 500	NA	**760**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0305	Mar 2005		<	5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**766**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-2	YVS-12-0605	Jun 2005	Duplicate		**8.33** J	**1.68**	**6.05** J	< 0.3	< 0.08	< 0.2	< 0.08	**0.382**	**5,450**	**913**	NA	< 250	NA	**1,038**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0605	Jun 2005	Parent		**8.37**	**1.71**	**6.1**	< 0.3	< 0.08	< 0.2	< 0.08	**0.368**	**5,530**	**1,230**	NA	< 250	NA	**1,355**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0605	Jun 2005	Average		**8.35**	**1.70**	**6.08**	< 0.3	< 0.08	< 0.2	< 0.08	**0.375**	**5,490**	**1,072**	NA	< 250	NA	**1,197**	NA	NA	NA	NA	NA
YVS-2	YVS-12-0905	Sep 2005	Duplicate		**13.4**	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-2	YVS-2-0905	Sep 2005	Parent		**15.2**	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-2	YVS-2-0905	Sep 2005	Average		**14.3**	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-2	YVS-2-1205	Dec 2005		<	25	**27.7**	< 5	< 0.291	< 0.0777	< 0.194	< 0.0777	**0.379**	**2,060**	**1,240** J	NA	< 260	NA	**1,370**	NA	NA	NA	NA	NA
YVS-2	YVS-20-0306	Mar 2006	Duplicate		**7.23**	< 1	**1.52**	< 0.286	< 0.0762	< 0.19	< 0.0762	**0.418**	**2,820**	< 243	NA	< 243	NA	< 243	NA	NA	NA	NA	NA
YVS-2	YVS-2-0306	Mar 2006	Parent		**7.38**	< 1	**1.66**	< 0.291	< 0.0777	< 0.194	< 0.0777	**0.384**	**2,860**	< 240	NA	< 240	NA	< 240	NA	NA	NA	NA	NA
YVS-2	YVS-2-0306	Mar 2006	Average		**7.31**	< 1	**1.59**	< 0.2885	< 0.07695	< 0.192	< 0.07695	**0.401**	**2,840**	< 242	NA	< 241.5	NA	< 241.5	NA	NA	NA	NA	NA
YVS-2	YVS-20-0606	Jun 2006	Duplicate		**7.52**	< 1	< 0.5	< 0.0777	< 0.0777	< 0.0388	< 0.0777	**0.0419**	**50.6**	**331** J	NA	< 250	NA	**456**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0606	Jun 2006	Parent		**7.7**	< 1	< 0.5	< 0.0755	< 0.0755	< 0.0377	< 0.0755	**0.0435**	**51.4**	**427** J	NA	< 253	NA	**553.5**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0606	Jun 2006	Average		**7.61**	< 1	< 0.5	< 0.0766	< 0.0766	< 0.03825	< 0.0766	**0.0427**	**51.0**	**379** J	NA	< 251.5	NA	**504.8**	NA	NA	NA	NA	NA
YVS-2	YVS-20-0906	Sep 2006			**6.9**	< 1	< 0.5	< 0.288	< 0.0721	< 0.192	< 0.0721	< 0.192	< 50	< 238	NA	< 476	NA	< 357	NA	NA	NA	NA	NA
YVS-2	YVS-2-0906	Sep 2006			**6.98**	< 1	< 0.5	< 0.286	< 0.0714	< 0.19	< 0.0714	< 0.19	< 50	< 240	NA	< 481	NA	< 360.5	NA	NA	NA	NA	NA
YVS-2	YVS-2-1206	Dec 2006			**9.7**	**2.2**	**1.14**	< 0.0762	< 0.0762	< 0.0381	**0.125** J	**0.475**	**1,580**	**334**	NA	< 240	NA	**454**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0507	May 2007			**11.4**	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**352**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-2	YVS-2-0408	Apr 2008			**1.54**	**7.17**	**8.54**	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**2,210**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-2	YVS-12-0608	Jun 2008	Duplicate		**11.1**	**18.6**	**5.2** J	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**491**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-2	YVS-2-0608	Jun 2008	Parent		**11.3**	**19.2**	**3.71** J	< 0.283	< 0.0755	**0.229**	< 0.0755	< 0.189	**473**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-2	YVS-2-0608	Jun 2008	Average		**11.2**	**18.9**	**4.46**	< 0.283	< 0.0755	< 0.16	< 0.08	< 0.19	**482**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-2	YVS-2-0908	Sep 2008			**13.4**	**1.2**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**351**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-2	YVS-2-0109	Jan 2009			**11.6**	**14.4**	**2.16**	< 0.283	< 0.0755	< 0.189	< 0.0755	**0.434**	**1,480**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-2	YVS-2-0309	Mar 2009			**3.76**	**13.4**	**41.6**	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**4,390**	**339** J	NA	< 236	NA	**457**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0609	Jun 2009			**5.1**	**4.28**	**1**	NA	NA	NA	NA	NA	**332**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-2	YVS-20-0909	Sep 2009	Duplicate		**6.9**	< 2	< 1	< 0.019	< 0.0094	< 0.019	**0.026**	**0.018**	< 50	**1,200**	NA	**1,300** J	NA	**2,500**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0909	Sep 2009	Parent		**6.4**	< 2	< 1	< 0.019	< 0.0095	< 0.019	**0.024**	**0.011** J	< 50	**1,300**	NA	**1,400** J	NA	**2,700**	NA	NA	NA	NA	NA
YVS-2	YVS-20-0909	Sep 2009	Average		**6.7**	< 2	< 1	< 0.019	< 0.0095	< 0.019	**0.025**	**0.015**	< 50	**1,250**	NA	**1,350** J	NA	**2,600**	NA	NA	NA	NA	NA

Table 3 Indicator Hazardous Substances in Groundwater – OU1 and Nissan Property

Location ID	Sample ID	Month Year	Sample Type	Chemical Name / Unit / Cleanup Level	Tetrachloro-ethylene µg/L 23.9	Arsenic µg/L 5	Benzene µg/L 5	4,4'-DDT µg/L 0.3	Aldrin µg/L	beta-BHC µg/L	Dieldrin µg/L	gamma-BHC (Lindane) µg/L	Gasoline Range Hydrocarbons µg/L 800	Diesel Range Hydrocarbons µg/L	Diesel Range Hydrocarbons w/SG µg/L	Motor Oil Range Hydrocarbons µg/L	Motor Oil Range Hydrocarbons w/SG µg/L	Total D + MO Range Hydrocarbons (Calculated) µg/L 500	Total D + MO Range Hydrocarbons w/SG (Calculated) µg/L 500	Fecal Coliform CFU/100 mL NA	N-Ammonia mg/L NA	Nitrogen, NO_2 plus NO_3 mg/L NA	Total Dissolved Solids mg/L NA
YVS-2																							
YVS-2	YVS-20-1209	Dec 2009	Duplicate		**10.7**	**6.9**	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	**0.139**	**278**	**2,400**	NA	**1,300**	NA	**3,700**	NA	NA	NA	NA	NA
YVS-2	YVS-2-1209	Dec 2009	Parent		**11.3**	**7**	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	**0.144**	**297**	**2,100**	NA	**1,200**	NA	**3,300**	NA	NA	NA	NA	NA
YVS-2	YVS-2-1209	Dec 2009	Average		**11**	**7.0**	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	**0.142**	**288**	**2,250**	NA	**1,250**	NA	**3,500**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0310	Mar 2010			**1.5**	**10.0**	**47.5**	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.050	**2,520**	**1,500**	NA	**500**	NA	**2,000**	NA	NA	NA	NA	NA
YVS-2	YVS-20-0610	Jun 2010	Duplicate		**1.4**	**8.0**	**50.8**	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.050	**2,530**	**1,000**	NA	< 380	NA	**1,190**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0610	Jun 2010	Parent		**1.4**	**6.6**	**46.4**	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.050	**2,830**	**1,100**	NA	**390**	NA	**1,490**	NA	NA	NA	NA	NA
YVS-2	YVS-2-0610	Jun 2010	Average		**1.4**	**7.3**	**48.6**	< 0.1	< 0.05 J	< 0.05	< 0.1	**0.050**	**2,680**	**1,050**	NA	**6,743**	NA	**1,340**	NA	NA	NA	NA	NA
YVS-2	YVS-20-0910	Sep 2010	Duplicate		**7.1**	**0.59**	< 1	< 0.1	< 0.05	< 0.05	< 0.1	**0.0369** J	< 100	**1,600**	< 76	**1,400**	< 380	**3,000**	< 228	NA	NA	NA	NA
YVS-2	YVS-2-0910	Sep 2010	Parent		**6.6**	**0.56**	< 1	< 0.1	< 0.05	< 0.05	< 0.1	**0.0354** J	< 100	**1,500**	< 76	**1,400**	< 380	**2,900**	< 228	NA	NA	NA	NA
YVS-2	YVS-2-0910	Sep 2010	Average		**6.9**	**0.575**	< 1	< 0.1	< 0.05	< 0.05	< 0.1	**0.0362**	< 100	**1,550**	< 76	**1,400**	< 380	**2,950**	< 228	NA	NA	NA	NA
YVS-2	YVS-2-0313	Mar 2013			**10.1**	**0.7**	**2.8**	NA	NA	NA	NA	NA	**261**	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**1.5**	**276**
YVS-2	YVS-2-0913	Sep 2013			**8.5**	< 0.5	< 1	NA	NA	NA	NA	NA	< 100 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-2	YVS-20-0314	Mar 2014	Duplicate		< 1.0	**3.2**	**3.2**	NA	NA	NA	NA	NA	**1,310** J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-2	YVS-2-0314	Mar 2014	Parent		< 1.0	**3.3**	**3.4**	NA	NA	NA	NA	NA	**1,120** J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-2	YVS-2-0314	Mar 2014	Average		< 1.0	**3.25**	**3.3**	NA	NA	NA	NA	NA	**1,215**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-2	YVS-20-0914	Sep 2014	Duplicate		**13.1**	< 0.5	< 1	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-2	YVS-2-0914	Sep 2014	Parent		**13.3**	< 0.5	< 1	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-2	YVS-2-0914	Sep 2014	Average		**13.2**	< 0.5	< 1	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Compliance																							
YS-1																							
YS-1	YS-1-0904	Sep 2004			**1.81**	**1.76**	< 1	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	< 50	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA
YS-1	YS-1-1204	Dec 2004			< 5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 500	NA	< 500	NA	< 500	NA	NA	NA	NA	NA
YS-1	YS-1-0305	Mar 2005			< 5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YS-1	YS-1-0605	Jun 2005			< 5	**1.41**	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YS-1	YS-1-0905	Sep 2005			< 5	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YS-1	YS-1-1205	Dec 2005			< 25	**2.13**	< 5	< 0.291	< 0.0777	< 0.194	< 0.0777	< 0.194	**126**	< 240	NA	< 240	NA	< 240	NA	NA	NA	NA	NA
YS-1	YS-1-0306	Mar 2006			< 1	**1.68**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**66.4**	< 240	NA	< 240	NA	< 240	NA	NA	NA	NA	NA
YS-1	YS-1-0606	Jun 2006			**0.71**	< 1	< 0.5	< 0.0755	< 0.0755	< 0.0377	< 0.0755	< 0.0377	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YS-1	YS-1-0906	Sep 2006			**6.18**	**1.3**	< 0.5	< 0.291	< 0.0728	< 0.194	< 0.0728	< 0.194	< 50	< 245	NA	< 490	NA	< 367.5	NA	NA	NA	NA	NA
YS-1	YS-1-1206	Dec 2006			**2.88**	**1.58**	< 0.5	< 0.0762	< 0.0762	< 0.0381	< 0.0762	< 0.0381	**81.5**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YS-1	YS-1-0507	May 2007			< 5	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YS-1	YS-1-0408	Apr 2008			**1**	**2**	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 800	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YS-1	YS-1-0608	Jun 2008			**1.61**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YS-1	YS-1-0908	Sep 2008			< 1	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YS-1	YS-1-0309	Mar 2009			< 1	**1.61**	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YS-1	YS-1-0909	Sep 2009			< 1	< 2	< 1	< 0.019	< 0.0094	< 0.019	< 0.019	< 0.0094	< 50	< 120	NA	< 240	NA	< 180	NA	NA	NA	NA	NA
YS-1	YS-1-0310	Mar 2010			**1.3**	**1.8**	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	< 50	**310**	NA	< 380	NA	**500**	NA	NA	NA	NA	NA
YS-1	YS-1-0910	Sep 2010			< 1	**0.61**	< 1	< 0.1	< 0.05	< 0.05	< 0.1	< 0.05	< 100	< 76	NA	< 380	NA	< 228	NA	NA	NA	NA	NA
YS-1	YS-1-0313	Mar 2013			**1.7**	< 0.50	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**2.2**	**197**
YS-1	YS-1-0913	Sep 2013			**1.2**	**0.50**	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YS-1	YS-1-0314	Mar 2014			< 1.0	**1.80**	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YS-1	YS-1-0914	Sep 2014			< 1.0	**0.58**	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6																							
MW-6	MW-6-0904	Sep 2004			**2.28**	< 1	**3.13**	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	**92.4**	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA
MW-6	MW-6-1204	Dec 2004			< 5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**114**	< 500	NA	< 500	NA	< 500	NA	NA	NA	NA	NA
MW-6	MW-6-0305	Mar 2005			< 5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**97.3**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
MW-6	MW-6-0605	Jun 2005			< 5	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**74**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
MW-6	MW-6-0905	Sep 2005			< 5	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**106**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
MW-6	MW6-1205	Dec 2005			< 25	< 1	< 5	< 0.288	< 0.0769	< 0.192	< 0.0769	< 0.192	**68.6**	< 238	NA	< 238	NA	< 238	NA	NA	NA	NA	NA
MW-6	MW-6-0306	Mar 2006			**1.95**	< 1	< 1	< 0.291	< 0.0777	< 0.194	< 0.0777	< 0.194	< 50	< 240	NA	< 240	NA	< 240	NA	NA	NA	NA	NA
MW-6	MW-6-0606	Jun 2006			**2.61**	< 1	< 0.5	< 0.0769	< 0.0769	< 0.0385	< 0.0769	< 0.0385	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
MW-6	MW-6-0906	Sep 2006			**10.2**	< 1	< 0.5	< 0.288	< 0.0721	< 0.192	< 0.0721	< 0.192	< 50	< 243 J	NA	< 485 J	NA	< 364	NA	NA	NA	NA	NA
MW-6	MW-6-1206	Dec 2006			**7.23**	< 1	< 0.5	< 0.0755	< 0.0755	< 0.0377	< 0.0755	< 0.0377	< 50	< 243	NA	< 243	NA	< 243	NA	NA	NA	NA	NA
MW-6	MW-6-0507	May 2007			< 5	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 263	NA	< 263	NA	< 263	NA	NA	NA	NA	NA
MW-6	MW-6-0408	Apr 2008			< 1	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 800	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-6	MW-6-0608	Jun 2008			**2.76**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-6	MW-6-0908	Sep 2008			**4.56**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-6	MW-6-0309	Mar 2009			< 1	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	**79.7**	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
MW-6	MW-6-0909	Sep 2009			**5**	< 2	< 1	< 0.019	< 0.0094	< 0.019	< 0.019	< 0.0094	< 50	**1,100**	NA	**1,200** J	NA	**2,300**	NA	NA	NA	NA	NA
MW-6	MW-6-1209	Dec 2009			NA	NA	NA	NA	NA	NA	NA	NA	NA	**220**	NA	< 380	NA	**410**	NA	NA	NA	NA	NA
MW-6	MW-6-0310	Mar 2010			**1.1**	< 0.5	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	**90.1**	**320**	NA	< 380	NA	**510**	NA	NA	NA	NA	NA
MW-6	MW-6-0910	Sep 2010			**3.9**	< 0.5	< 1	< 0.1	< 0.05	< 0.05	< 0.1	< 0.05	< 100	**1200**	< 76	**1200**	< 380	**2400**	< 228	NA	NA	NA	NA
MW-6	MW-6-0313	Mar 2013			**1.0**	< 0.50	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**2.2**	**200**
MW-6	MW-6-0913	Sep 2013			**6.2**	< 0.50	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	MW-6-0314	Mar 2014			< 1.0	< 0.50	< 1.0	NA	NA	NA	NA	NA	**155** J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	MW-6-0914	Sep 2014			**5.7**	< 0.50	< 1.0 UJ	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3 Indicator Hazardous Substances in Groundwater – OU1 and Nissan Property

Location ID	Sample ID	Month Year	Sample Type	Chemical Name / Unit / Cleanup Level	Tetrachloro-ethylene µg/L 23.9	Arsenic µg/L 5	Benzene µg/L 5	4,4'-DDT µg/L 0.3	Aldrin µg/L	beta-BHC µg/L	Dieldrin µg/L	gamma-BHC (Lindane) µg/L	Gasoline Range Hydrocarbons µg/L 800	Diesel Range Hydrocarbons µg/L	Diesel Range Hydrocarbons w/SG µg/L	Motor Oil Range Hydrocarbons µg/L	Motor Oil Range Hydrocarbons w/SG µg/L	Total D + MO Range Hydrocarbons (Calculated) µg/L 500	Total D + MO Range Hydrocarbons w/SG (Calculated) µg/L 500	Fecal Coliform CFU/100 mL NA	N-Ammonia mg/L NA	Nitrogen, NO_2 plus NO_3 mg/L NA	Total Dissolved Solids mg/L NA
YVS-3																							
YVS-3	YVS-30-0904	Sep 2004	Duplicate		**3.36**	< 1	**8.61**	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	**99.7**	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA
YVS-3	YVS-3-0904	Sep 2004	Parent		**3.34**	< 1	**9.6**	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	**88.4**	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA
YVS-3	YVS-3-0904	Sep 2004	Average		**3.35**	< 1	**9.11**	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	**94.1**	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA
YVS-3	YVS-30-1204	Dec 2004	Duplicate		**6.56**	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**124**	< 500	NA	< 500	NA	< 500	NA	NA	NA	NA	NA
YVS-3	YVS-3-1204	Dec 2004	Parent		**6.66**	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**120**	< 500	NA	< 500	NA	< 500	NA	NA	NA	NA	NA
YVS-3	YVS-3-1204	Dec 2004	Average		**6.61**	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**122**	< 500	NA	< 500	NA	< 500	NA	NA	NA	NA	NA
YVS-3	YVS-13-0305	Mar 2005	Duplicate	< 5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**258**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-3	YVS-3-0305	Mar 2005	Parent	< 5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**262**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-3	YVS-3-0305	Mar 2005	Average	< 5	< 5	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**260**	**250**	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-3	YVS-3-0605	Jun 2005		< 5	< 1	< 5	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**83.1**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-3	YVS-3-0905	Sep 2005		< 5	< 1	**13**	< 0.3	< 0.08	< 0.2	< 0.08	< 0.2	**240**	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-3	YVS-30-1205	Dec 2005	Duplicate	< 25	< 1	< 5	< 0.288	< 0.0769	< 0.192	< 0.0769	< 0.192	**152**	< 238	NA	< 238	NA	< 238	NA	NA	NA	NA	NA
YVS-3	YVS-3-1205	Dec 2005	Parent	< 25	< 1	< 5	< 0.288	< 0.0769	< 0.192	< 0.0769	< 0.192	**185**	< 240	NA	< 240	NA	< 240	NA	NA	NA	NA	NA
YVS-3	YVS-3-1205	Dec 2005	Average	< 25	< 1	< 5	< 0.288	< 0.0769	< 0.192	< 0.0769	< 0.192	**168.5**	< 239	NA	< 239	NA	< 239	NA	NA	NA	NA	NA
YVS-3	YVS-3-0306	Mar 2006		**1.53**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-3-0606	Jun 2006		**3.55**	< 1	**0.64**	< 0.0769	< 0.0769	< 0.0385	< 0.0769	< 0.0385	< 50	< 250	NA	< 250	NA	< 250	NA	NA	NA	NA	NA
YVS-3	YVS-3-0906	Sep 2006		**7.89**	< 1	**5.35**	< 0.283	< 0.0708	< 0.189	< 0.0708	< 0.189	**87.3**	< 240	NA	< 481	NA	< 360.5	NA	NA	NA	NA	NA
YVS-3	YVS-3-1206	Dec 2006		**10.7**	< 1	**0.86**	< 0.0755	< 0.0755	< 0.0377	< 0.0755	< 0.0377	**93.2**	< 238	NA	< 238	NA	< 238	NA	NA	NA	NA	NA
YVS-3	YVS-3-0507	May 2007		< 5	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-13-0408	Apr 2008	Duplicate	**2.75**	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 800	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-3-0408	Apr 2008	Parent	**2.79**	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 800	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-3-0408	Apr 2008	Average	**2.77**	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 800	< 236	NA	> **236**	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-3-0608	Jun 2008		**1.11**	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-130-0908	Sep 2008	Duplicate	**4.8**	< 1	**2.09**	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-3-0908	Sep 2008	Parent	**4.35**	< 1	**1.74**	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-3-0908	Sep 2008	Average	**4.58**	< 1	**1.92**	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-3-0109	Jan 2009		NA	NA	< 1	NA	NA	NA	NA	NA	< 50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3	YVS-3-0309	Mar 2009		< 1	< 1	< 1	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3	YVS-3-0609	Jun 2009		NA	NA	< 1	NA	NA	NA	NA	NA	< 50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3	YVS-3-0909	Sep 2009		**1.6**	< 2	< 1	< 0.019	< 0.0094	< 0.019	< 0.019	< 0.0094	< 50	**980** J	NA	**820** J	NA	**1,800**	NA	NA	NA	NA	NA
YVS-3	YVS-3-1209	Dec 2009		NA	NA	< 1	NA	NA	NA	NA	NA	< 50	**92**	NA	< 380	NA	**282**	NA	NA	NA	NA	NA
YVS-3	YVS-3-0310	Mar 2010		**1.3**	< 0.5	< 1	< 0.1	< 0.05 J	< 0.05	< 0.1	< 0.05	< 50	< 75	NA	< 380	NA	< 227.5	NA	NA	NA	NA	NA
YVS-3	YVS-3-0610	Jun 2010		NA	NA	< 1	NA	NA	NA	NA	NA	< 50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3	YVS-3-0910	Sep 2010		**1.8**	< 0.5	**1.1**	< 0.1	< 0.05	< 0.05	< 0.1	< 0.05	< 50	**760**	NA	**610**	NA	**1370**	NA	NA	NA	NA	NA
YVS-3	YVS-3-0313	Mar 2013		< 1.0	< 0.50	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**1.6**	**130**
YVS-3	YVS-3-0913	Sep 2013		**1.5**	< 0.50	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3	YVS-3-0314	Mar 2014		< 1.0	< 0.50	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3	YVS-3-0914	Sep 2014		**1.4**	< 0.50	< 1.0	NA	NA	NA	NA	NA	< 100 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60																							
YVS-3-60	YVS-3-60-0904	Sep 2004		**20.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-1204	Dec 2004		**20.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0305	Mar 2005		**11.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0605	Jun 2005		**11.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0905	Sep 2005		**21.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-1205	Dec 2005		< 25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0306	Mar 2006		**11.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0606	Jun 2006		**10.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0906	Sep 2006		**17.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-1206	Dec 2006		**18.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0507	May 2007		**8.34**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0408	Apr 2008		**9.87**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0608	Jun 2008		**7.58**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0908	Sep 2008		**28**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0309	Mar 2009		**10.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0909	Sep 2009		**19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0310	Mar 2010		**7.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0910	Sep 2010		**20.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0313	Mar 2013		**10.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**2.3**	**413**
YVS-3-60	YVS-3-60-0913	Sep 2013		**21.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0314	Mar 2014		**10**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-60	YVS-3-60-0914	Sep 2014		**32.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3 Indicator Hazardous Substances in Groundwater – OU1 and Nissan Property

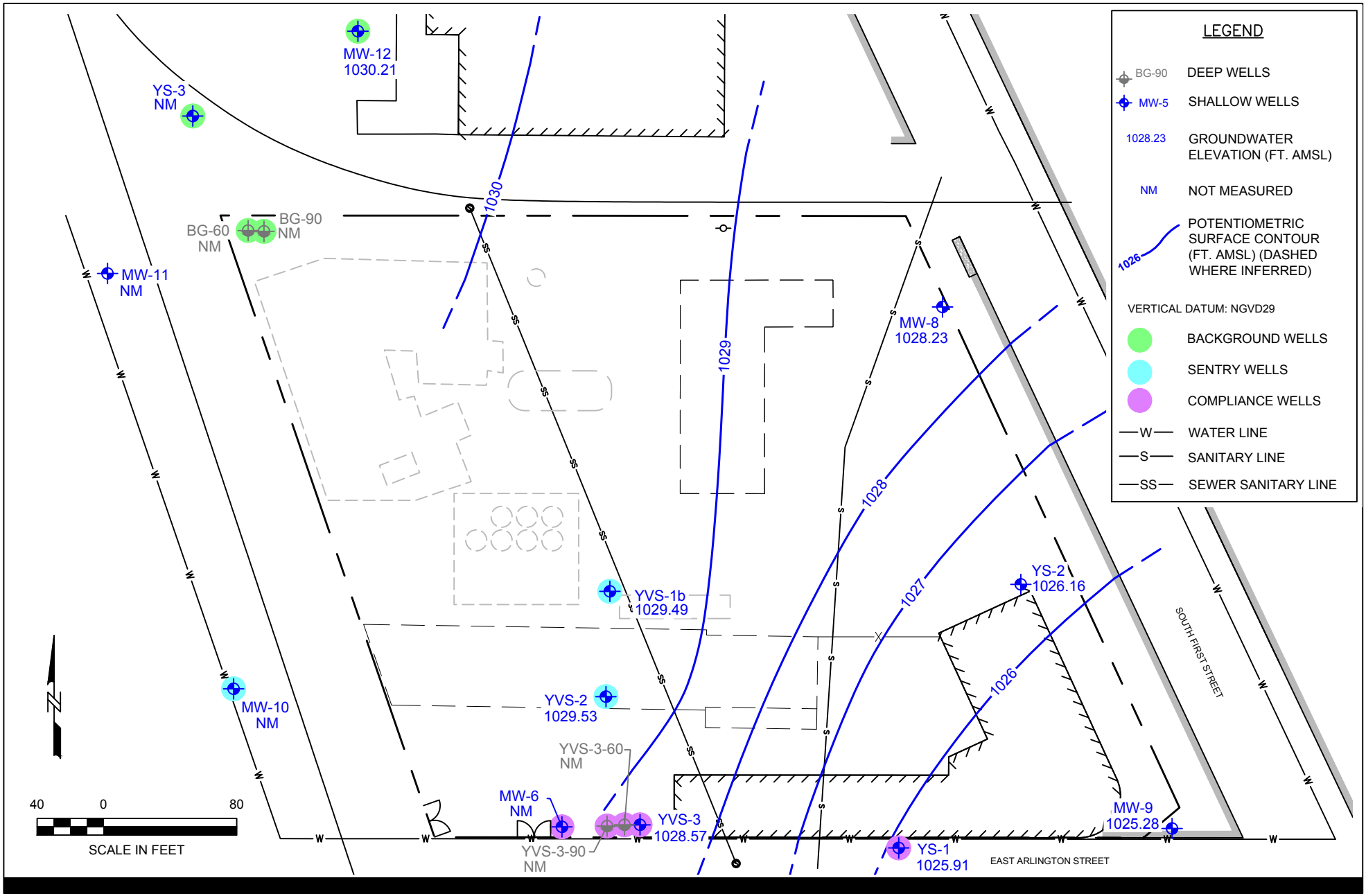
Location ID	Sample ID	Month Year	Sample Type	Chemical Name / Unit / Cleanup Level	Tetrachloro-ethylene µg/L 23.9	Arsenic µg/L 5	Benzene µg/L 5	4,4'-DDT µg/L 0.3	Aldrin µg/L	beta-BHC µg/L	Dieldrin µg/L	gamma-BHC (Lindane) µg/L	Gasoline Range Hydrocarbons µg/L 800	Diesel Range Hydrocarbons µg/L	Diesel Range Hydrocarbons w/SG µg/L	Motor Oil Range Hydrocarbons µg/L	Motor Oil Range Hydrocarbons w/SG µg/L	Total D + MO Range Hydrocarbons (Calculated) µg/L 500	Total D + MO Range Hydrocarbons w/SG (Calculated) µg/L 500	Fecal Coliform CFU/100 mL NA	N-Ammonia mg/L NA	Nitrogen, NO_2 plus NO_3 mg/L NA	Total Dissolved Solids mg/L NA
YVS-3-90																							
YVS-3-90	YVS-3-90-0904	Sep 2004			< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-1204	Dec 2004			< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0305	Mar 2005			< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0605	Jun 2005			< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0905	Sep 2005			< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-1205	Dec 2005			< 25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0306	Mar 2006			< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0606	Jun 2006			**0.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0906	Sep 2006			< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-1206	Dec 2006			< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0507	May 2007	Parent		< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-13-0507	May 2007	Duplicate		< 5	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0507	May 2007	Average		< 5	< 1	< 5	< 0.283	< 0.0755	< 0.189	< 0.0755	< 0.189	< 50	< 236	NA	< 236	NA	< 236	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0408	Apr 2008			< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0608	Jun 2008			< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0908	Sep 2008			< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0309	Mar 2009			< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0909	Sep 2009			< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0310	Mar 2010			**1.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0910	Sep 2010			< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0313	Mar 2013			< 1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.0	< 0.100	**2.5**	**182**
YVS-3-90	YVS-3-90-0913	Sep 2013			< 1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0314	Mar 2014			< 1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YVS-3-90	YVS-3-90-0914	Sep 2014			< 1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other																							
MW-5	MW-5-0904	Sep 2004			**2.11**	< 10	< 1	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	< 50	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA	NA
MW-8	MW-8-0904	Sep 2004			< 1	< 2.2	< 1	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	< 50	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA	NA
MW-9	MW-9-0904	Sep 2004			< 1	< 1	< 1	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	< 50	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA	NA
YS-2	YS-2-0904	Sep 2004			< 1	< 1	< 1	< 0.08	< 0.08	< 0.04	< 0.08	< 0.04	< 50	< 250	NA	< 500	NA	< 375	NA	NA	NA	NA	NA	NA
FieldQC	TB-0309	Mar 2009	TB		< 1	NA	< 1	NA	NA	NA	NA	NA	< 50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0609	Jun 2009	TB		< 1	NA	< 1	NA	NA	NA	NA	NA	< 50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0909	Sep 2009	TB		< 1	NA	< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-1209	Dec 2009	TB		< 1	NA	< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0310	Mar 2010	TB		< 1	NA	< 1	NA	NA	NA	NA	NA	< 50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0610	Jun 2010	TB		< 1	NA	< 1	NA	NA	NA	NA	NA	< 50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0910	Sep 2010	TB		< 1	NA	< 1	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0313	Mar 2013	TB		< 1.0	NA	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0913	Sep 2013	TB		< 1.0	NA	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0314	Mar 2014	TB		< 1.0	NA	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FieldQC	TB-0914	Sep 2014	TB		< 1.0	NA	< 1.0	NA	NA	NA	NA	NA	< 100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA - Not applicable
J - Estimated concentration
UJ - Undetected, reporting limit is estimated
TB - Trip blank
Bold - Detection
Bold & Shaded - Cleanup level exceedance
Bold & Blue - Cleanup level exceedance by detection limit for non-detects
PCE Action Level based on background PCE concentration statistical calculation last updated September 2014.
YVS-1b was installed as a replacement for YVS-1, which was decommissioned during site development in 2006.

Figures

Last saved by: SCHWARTZE(2014-10-15) Last Plotted: 2014-10-16
Filename: M:\TEMP\ERIC\YSV_1_GROUNDWATER CONTOURS MAP _SEPT 2014.DWG

Project Management Initials: Designer: E.S.S. Checked:____ Approved:____ ANSI B 8.5" x 11"



Yakima Valley
Spray Site
Yakima, Washington
Project No.: 60289030 Date: 10/16/14

POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
SEPTEMBER 2014

AECOM

Figure: 1

Attachment A

Field Forms

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1834954

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: AECOM	Report To: Jason Palmer	Attention:
Address: 710 2nd Ave. Suite 1000 Seattle WA 98104	Copy To:	Company Name:
Email To: Jason.Palmer@aecom.com	Purchase Order No.:	Address:
Phone: 206-624-9349 Fax:	Project Name: Yakima Valley Spray	Pace Quote Reference:
Requested Due Date/TAT:	Project Number: 60241030-0200	Pace Project Manager: Carol Dary
		Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: Yakima WA

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: PCE 8260	Benzene 8260	NW TPH - Gx	Arsenic 200.8	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-12-0914	W	09/16	1255			18	3				X					X					
2	BG-90-0914	W	09/16	1730			18	3				X					X					
3	BG-60-0914	W	09/16	1420			18	3				X					X					
4	YVS-3-0914	W	09/16	1525			18	7			X	X					X	X	X	X		
5	YVS-3-60-0914	W	09/16	1620			18	3				X					X					
6	YVS-3-90-0914	W	09/16	1655			18	3				X					X					
7	MW-6-0914	W	09/17	1000			19	21			X	X					X	X	X	X		MS/MSD
8	YS-1-0914	W	09/17	1110			19	7			X	X					X	X	X	X		
9	YVS-1b-0914	W	09/17	1200			18	7			X	X					X	X	X	X		
10	YVS-2-0914	W	09/17	1245			20	7			X	X					X	X	X	X		
11	YVS-20-0914	W	09/17	1330			20	7			X	X					X	X	X	X		
12	TB-0914	W	—	—				2									X	X	X			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Arsenic is Field Filtered.	Abdelghani Selban	9/17/14	1430				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Abdelghani Selban

SIGNATURE of SAMPLER: Abdelghani Selban DATE Signed (MM/DD/YY): 9/17/14

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

2

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

AECOM

Yakima Groundwater Gauging Log

Date: 09/16/14		**Project Number:**	60241030-0200
Personnel On the Site: Ghani Sebbar		**Weather**	Sunny 98°F.
Name	**Affiliation**	**Conditions:**	
Ghani Sebbar	AECOM	**Inches of Rain:** NA **Temp High:** 88°F. **Temp Low:** 70°F	

Well Number	Time	Depth to Water DTW (ft)	Total well Depth TWD (ft)	Comments/Natural Attenuation
MW-12	1220	12.92	TOC. PVC	TOC metal 13.03'
BG-60	1108	16.74		
BG-90	1105	18.67		
MW-8	1115	13.12		
YVS-1b	1059	11.45		
YVS-2	1056	11.25		
MW-6	1054	NM		probe stack @ 8.06 ft.
YS-1	1138	14.65		
YS-2	1130	14.17		
YVS-3	1049	12.44		
YVS-3-60	1052	15.50		
YVS-3-90	1054	19.75		
MW-9	1135	14.79		

Additional Comments/Well Maintenance Requirements:

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	MW-12
Project Number:	60241030-0200	Sample ID:	MW-12-0914
Date:	09/16/14	Well Condition:	Good
Weather:	79 °F Sunny	Sampled By:	Abdelghaani Schbaro

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	13.03	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	12.37	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	2.03	Tubing Inlet Depth* (ft):	22.50
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	25.40
Inner Casing Material:	PVC		
Start Purge Time:	1236		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1246	250	13.03		18.27	278	4.11	6.50	319.7	1.01	
1249	250	13.03		18.26	278	4.10	6.47	319.0	0.94	
1252	250	13.03		18.33	279	4.14	6.47	317.7	0.90	

SAMPLING INFORMATION

Sample ID	sample time	Analysis	Method	Container	No. of bottles	Preservative
MW-12-0914	1255	~~PCE/Benzene~~	8260 B	40 ml VOA Vial	3	HCl
		~~TPH-Gas~~	~~NWTPH-Gx~~	~~40 ml VOA Vial~~	~~3~~	~~HCl~~
		~~Arsenic~~	EPA 200.8	~~500 mL HDPE~~	~~1~~	~~HNO3~~

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

purge water is clear

A

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	BG-90
Project Number:	60241030-0200	Sample ID:	BG-90-0914
Date:	09/16/14	Well Condition:	Good
Weather:	79 °F Sunny	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft):	18.68	Purge/Sample Method:	low-flow
Depth to Product* (ft):	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	72.32	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	11.86	Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	91
Inner Casing Material:	PVC		
Start Purge Time:	~~1328~~ 1709		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1338	250	19.29		17.21	254	1.55	6.95	285.7		
1719	250	19.15		18.49	258	1.94	7.20	266.4	7.38	
1722	250	19.15		18.38	258	1.78	7.25	262.8	6.45	
1725	250	19.15		18.29	259	1.64	7.28	260.1	5.97	
1728	250	19.15		18.41	260	1.49	7.34	256.2	5.25	

SAMPLING INFORMATION

Sample ID	sample time	Analysis	Method	Container	No. of bottles	Preservative
BG-90-0914	1730	~~PCE/Benzene~~	8260 B	40 ml VOA Vial	3	HCl
		~~TPH Gas~~	~~NWTPH-Gx~~	~~40 ml VOA Vial~~	~~3~~	~~HCl~~
		Arsenic	~~EPA 200.8~~	500 mL ~~HDPE~~	1	~~HNO3~~

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

purge water is clear, pump stop pumping after 10 min. back to purge a well @ the end of the day. After troubleshoot.

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	BG-60
Project Number:	60241030-0200	Sample ID:	BG-60-0914
Date:	09/ 16 /14	Well Condition:	Good
Weather:	80 °F Sunny	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	16.75	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	43.75	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	7.17	Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	60.50
Inner Casing Material:	PVC		
Start Purge Time:	1356		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1406	250	16.84		18.09	288	2.11	6.82	258.4	6.96	
1409	250	16.84		18.53	291	2.11	6.87	254.5	6.38	
1412	250	16.84		18.79	293	2.11	6.86	253.9	5.10	
1415	250	16.84		18.81	293	2.11	6.82	255.1	4.06	

SAMPLING INFORMATION

Sample ID	sample time	Analysis	Method	Container	No. of bottles	Preservative
BG-60-0914	1420	PCE/Benzene	8260 B	40 ml VOA Vial	3	HCl
		TPH Gas	NWTPH-Gx	40 ml VOA Vial	3	HCl
		Arsenic	EPA 200.8	500 mL HDPE	1	HNO3

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

purge water is clear.

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	YVS-3
Project Number:	60241030-0200	Sample ID:	YVS-3-0914
Date:	09/ 16 /14	Well Condition:	Good
Weather:	79 °F Cloudy	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	12.44	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	16.06	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	2.63	Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	28.50
Inner Casing Material:	PVC		
Start Purge Time:	1508		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1518	250	1248		18.86	401	1.46	4.86	338.2	1.57	
1521	250	1248		18.80	402	1.36	4.78	346.4	1.56	
1524	250	1248		18.76	402	1.31	4.81	342.2	1.18	

SAMPLING INFORMATION

Sample ID	sample time	Analysis	Method	Container	No. of bottles	Preservative
YVS-3-0914	1525	PCE/Benzene	8260 B	40 ml VOA Vial	3	HCl
		TPH Gas	NWTPH-Gx	40 ml VOA Vial	3	HCl
		Arsenic	EPA 200.8	500 mL HDPE	1	HNO3

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

purge water is clear.
Arsenic is field filtered

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	YVS-3-60
Project Number:	60241030-0200	Sample ID:	YVS-3-60-0914
Date:	09/ 16 /14	Well Condition:	Good
Weather:	79 °F cloudy	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	15.54	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	45.06	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	7.39	Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	60.60
Inner Casing Material:	PVC		
Start Purge Time:	1543		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1553	250	15.64		18.41	318	3.04	6.13	292.9	13.6	
1556	250	15.64		18.36	315	2.96	6.18	291.0	15.4	
1559	250	15.64		18.34	313	2.91	6.27	287.4	16.1	
1602	250	15.64		18.31	311	2.86	6.33	284.7	15.3	
1605	250	15.64		18.24	310	2.83	6.38	283.6	15.4	
1608	250	15.64		18.30	309	2.81	6.40	282.1	14.3	
1611	250	15.64		18.19	308	2.80	6.41	280.6	15.1	
1614	250	15.64		18.20	308	2.79	6.44	278.5	15.5	
1617	250	15.64		18.14	307	2.78	6.45	274.1	15.5	

SAMPLING INFORMATION

Sample ID	Sample Time	Analysis	Method	Container	No. of Bottles	Preservative
YVS-3-60-0914	1620	PCE/~~Benzene~~	8260 B	40 ml VOA Vial	3	HCl
		~~TPH Gas~~	~~NWTPH-Gx~~	~~40 ml VOA Vial~~	~~3~~	~~HCl~~
		~~Arsenic~~	~~EPA 200.8~~	~~500 mL HDPE~~	~~1~~	~~HNO3~~

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

purge water is clear, Turbidity unstable

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	YVS-3-90
Project Number:	60241030-0200	Sample ID:	YVS-3-90-0914
Date:	09/ 16 /14	Well Condition:	Good
Weather:	79 °F	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	19.81	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	70.69	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	11.59	Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	90.50
Inner Casing Material:	PVC		
Start Purge Time:	1629		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1639	250	19.82		18.69	229	3.81	6.71	274.6	15.2	
~~1642~~	~~250~~	~~19.83~~		~~18.~~						
1647	250	19.83		18.38	226	3.59	6.04	264.1	4.67	
1650	250	19.83		18.37	226	3.56	7.09	262.7	4.52	
1653	250	19.83		18.34	225	3.54	7.15	263.7	4.13	

SAMPLING INFORMATION

Sample ID	Sample Time	Analysis	Method	Container	No. of Bottles	Preservative
YVS-3-90-0914	1655	~~PCE/Benzene~~	8260 B	40 ml VOA Vial	3	HCl
		~~TPH-Gas~~	NWTPH-Gx	~~40 ml VOA Vial~~	~~3~~	~~HCl~~
		~~Arsenic~~	~~EPA 200.8~~	~~500 mL HDPE~~	~~1~~	~~HNO3~~

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

purge water is clear.

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	MW-6
Project Number:	60241030-0200	Sample ID:	MW-6-0914
Date:	09/17/14	Well Condition:	Good
Weather:	69 °F cloudy	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	NM	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):		Screened Interval Depth Range* (ft)	
water Volume in Well (gal):		Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	NM
Inner Casing Material:	PVC		
Start Purge Time:	0940		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
0950	250	NM		19.16	709	3.87	6.32	341.7	0.93	
0953	250	NM		19.18	711	3.84	6.25	335.8	0.76	
0956	250	NM		19.20	712	3.76	6.17	335.2	0.48	

SAMPLING INFORMATION

Sample ID	Sample Time	Analysis	Method	Container	No. of Bottles	Preservative
MW-6-0914	1000	PCE/Benzene	8260 B	40 ml VOA Vial	3 X 3	HCl
		TPH Gas	NWTPH-Gx	40 ml VOA Vial	3 X 3	HCl
		Arsenic	EPA 200.8	500 mL HDPE	1 X 3	HNO3

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

DTW - NM due to the pump stuck in bottom of the well.
purge water is clear. Arsenic is Field Filtered.
Collected MS/MSD.

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	YS-1
Project Number:	60241030-0200	Sample ID:	YS-1-0914
Date:	09/17/14	Well Condition:	Good
Weather:	76 °F partly sunny	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	14.62	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	6.38	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	1.04	Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	21
Inner Casing Material:	PVC		
Start Purge Time:	1043		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1053	250	14.64		20.50	354	6.04	6.07	322.4	8.99	
1056	250	14.64		19.82	270	6.33	5.94	329.9	5.47	
1059	250	14.64		19.52	220	6.39	5.92	330.1	4.15	
1102	250	14.64		19.45	201	6.38	5.95	328.0	3.17	
1105	250	14.64		19.44	192	6.38	5.97	327.1	1.60	
1108	250	14.64		19.43	188	6.37	5.99	326.9	0.95	

SAMPLING INFORMATION

Sample ID	sample time	Analysis	Method	Container	No. of bottles	Preservative
YS-1-0914	1110	PCE/Benzene	8260 B	40 ml VOA Vial	3	HCl
		TPH Gas	NWTPH-Gx	40 ml VOA Vial	3	HCl
		Arsenic	EPA 200.8	500 mL HDPE	1	HNO3

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

Purge water is clear.
Arsenic is field filtered

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	YVS-1b
Project Number:	60241030-0200	Sample ID:	YVS-1b-0914
Date:	09/ 17 /14	Well Condition:	Good
Weather:	73 °F cloudy	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	11.40	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	14.6	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	2.39	Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	26
Inner Casing Material:	PVC		
Start Purge Time:	1133		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1143	250	11.42		18.16	463	4.03	6.19	328.4	12.8	
1146	250	11.42		18.10	446	3.97	6.29	321.6	9.19	
1149	250	11.42		18.11	445	3.95	6.32	319.8	6.12	
1152	250	11.42		18.10	444	3.95	6.35	318.1	5.19	
1155	250	11.42		18.11	441	3.95	6.37	316.5	3.34	

SAMPLING INFORMATION

Sample ID	sample time	Analysis	Method	Container	No. of bottles	Preservative
YVS-1b-0914	1200	PCE/Benzene	8260 B	40 ml VOA Vial	3	HCl
		TPH Gas	NWTPH-Gx	40 ml VOA Vial	3	HCl
		Arsenic	EPA 200.8	500 mL HDPE	1	HNO3

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

purge water is cloudy, and very smelly (like rotten egg)
Arsenic is field Filtered.

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

LOW-FLOW GROUND WATER SAMPLING FORM

Project Name:	Yakima Valley Spray YVS	Well ID:	YVS-2
Project Number:	60241030-0200	Sample ID:	YVS-2-0914
Date:	09/ 17 /14	Well Condition:	Good
Weather:	79 °F partly sunny	Sampled By:	AS

PRE-PURGE INFORMATION

Initial Depth to Water* (ft) :	11.25	Purge/Sample Method:	low-flow
Depth to Product* (ft) :	NA	Purge/Sample Equipment:	Ded. Bladder Pump
Product Thickness (ft):	NA	Sampling Tube Material:	Polyethylene, Silicone
Water Column (ft):	15.25	Screened Interval Depth Range* (ft)	
water Volume in Well (gal):	2.50	Tubing Inlet Depth* (ft):	
Inner Casing Diameter (Inch):	2	Total Well Depth* (feet):	26.50
Inner Casing Material:	PVC		
Start Purge Time:	1222		

PURGING INFORMATION

Time	purge rate (mL/min)	depth to water (ft)	volume purged (gal)	Temp (°C)	Conductivity (mS/m)	Dissolved Oxygen (mg/L)	pH (SI Unites)	ORP mV	Turbidity (NTU)	Comments
1232	250	11.27		19.98	438	1.08	5.99	314.4	4.59	
1235	250	11.27		20.02	433	1.05	5.96	317.1	3.29	
1238	250	11.27		20.03	431	1.03	5.97	315.4	2.66	
1241	250	11.27		20.05	430	1.01	5.95	314.2	2.09	
~~1244~~										

SAMPLING INFORMATION

Sample ID	sample time	Analysis	Method	Container	No. of bottles	Preservative
YVS-2-0914	1245	PCE/Benzene	8260 B	40 ml VOA Vial	3	HCl
		TPH Gas	NWTPH-Gx	40 ml VOA Vial	3	HCl
		Arsenic	EPA 200.8	500 mL HDPE	1	HNO3

STABILIZATION RANGES

Dissolved Oxygen: +/- 10%
Conductivity: +/- 10%
Temperature: +/- 10 %
pH: +/- 0.1 unit
Redox Potential: +/- 10%
Turbidity: +/- 10%

COMMENTS & OBSERVATIONS: (slow recharge, turbidity, odor, sheen, PID readings)

purge water is clear.
collected Duplicate YVS-20-0914 @ 1330
Arsenic is Field Felted

USEFUL INFORMATION

* = Measured from top of inner casing
DTW - Depth to Water
Initial purge 15 minutes, then measure at 3 minute intervals
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

2" casing: 1 ft = 0.164 gal = 0.62 L
4" casing: 1 ft = 0.656 gal = 2.48 L
1 gal = 3785.4 mL

AECOM

Field Activity Log

Project Name: YVS -
Project Number:
Field Activity: Semi-Annual GW Sampling.
Completed By: Abdulghaffar Selbaa
Date: 09/16/14
Weather: Sunny 88°F
Personnel on site: Ghaffar Selbaa

1000: Arrived to the site, Met with U-haul manager to let him know about being on site and will sample wells in U-haul parking lot.
1015: Filled out H&S tailgate sheet, put on PPE
1020: started gauging site wide wells
1145: Finished gauging and started calibrating Equipment. YSI and Turbidimeter.
1225: started setting up on MW-2.
1236: Began purging, water is clear.
1246: started recording parameters.
1255: Began sampling.
1328: Started purging on BG-90, water is clear
After 10 min purging pump stop pumping, troubleshoot. a pump. moved on to next well.
1356: Began purging on BG-60, water is clear.
1406: started recording parameters.
1420: Began Sampling.
1508: Started purging on YVS-3, water is clear.
1518: Began recording parameter.
1525: started sampling.
1545: Began purging YVS-3-60, water is clear.
1553: started collecting parameters, turbidity unstable.
1620: Began Sampling.
1629: Started purging on YVS-3-90, water is clear.
1639: Began recording parameters,
1655: started sampling.
1700: Began troubleshooting BG-90 pump.
1900: started pursing on BG-90 - after 10 min began recording parameter.
1730: Began sampling - Disposed purge water
1800: left a site.

Abdulghaffar Selbaa

AECOM

Field Activity Log

Page: 1 of 1

Project Name: YVS.
Project Number:
Field Activity: Semi-Annual GW Sampling
Completed By: Abdelghani Sbaa
Date: 09/17/14
Weather: Partly cloudy 65-88 °F
Personnel on site: Ghani Sbaa

0845: Arrived to the site, Filled out H&S tail gate sheet.
0900: started calibrating Equipment. YSI and turbidimeter.
0930: Began setting up on MW-6
0940: started purging on MW-6, water is clear.
0950: Began recording parameters.
1000: started sampling, also collected MS/MSD.
1043: Began purging on YS-1, water is clear.
1053: started recording parameters.
1110: Began sampling.
1133: started purging on YVS-1b, water is cloudy.
1143: Began recording parameters
1200: started sampling.
1220 Began purging on YVS-2, water is clear.
1232: started recording parameters.
1245: Began sampling, also collected duplicate YVS-20-0914 @ 1330.
1315: started packing up, disposed purge water generated. total purge water 55 gal or 1 full drum, closed firmly and labeled ready for pick up.
1345: left a site to FedEx location packed samples into cooler with ice and filled out COC and shipped a cooler to PACE in Minneapolis. Mn.

Abdelghani Sbaa

AECOM

Equipment Calibration Log

Project Name: YVS Field Activity: Semi-Annual GW Sampling Page 1 of 1

Project No.: Weather: Sunny 75-88°F

Circle or Write in Type/Equipment Model	Serial No.	Owned or Rented	Calibrated By	Date	Time	Parameter Calibrated and Calibration Standard	Calibration Pass?	Comments/Notes
YSI-556	02C09 82AD	(Owned) / Rented	AS	9/16/14	1145	**DO** Atmospheric Pressure: 731.6 DO Cal Reading: 8.44 mg/L	yes	
						pH *pH 4.0* Initial pH reading: 4.07 *pH 10.0* Initial pH reading: 10.05 *pH 7.0* Initial pH reading: 6.95	yes	
						Specific Conductivity 1409 Spec Conductivity: 1356 (µS/cm) or mS/cm	yes	
Turbidity Meter (HACH or LaMotte)	111100C 14008	(Owned) / Rented	AS	9/16/14	1200	**Turbidity** Turbidity Standards: 10-20-100-800 NTU	yes	
PID		Owned / Rented				**VOC** Isobutylene 100 ppm VOC: Fresh Air Calibration:		
YSI-556	Same As above	(Owned) / Rented	AS	9/17/14	0900	**DO** Atmospheric Pressure: 726.7 DO Cal Reading: 8.76 mg/L	yes	
						pH *pH 4.0* Initial pH reading: 4.07 *pH 10.0* Initial pH reading: 10.02 *pH 7.0* Initial pH reading: 6.92	yes	
						Specific Conductivity 1409 Spec Conductivity: 1269 (µS/cm) or mS/cm	yes	
Turbidity Meter (HACH or LaMotte)	Same as above	(Owned) / Rented	AS	9/17/14	0915	**Turbidity** Turbidity Standards: 10-20-100-800 NTU	yes	
PID		Owned / Rented				**VOC** Isobutylene 100 ppm VOC: Fresh Air Calibration:		
YSI-556		Owned / Rented				**DO** Atmospheric Pressure: DO Cal Reading: mg/L		
						pH *pH 4.0* Initial pH reading: _____ *pH 10.0* Initial pH reading: _____ *pH 7.0* Initial pH reading:		
						Specific Conductivity Spec Conductivity: µS/cm or mS/cm		
Turbidity Meter (HACH or LaMotte)		Owned / Rented				**Turbidity** Turbidity Standards:		
PID		Owned / Rented				**VOC** Isobutylene 100 ppm VOC: Fresh Air Calibration:		

FIELD ENVIRONMENTAL INSTRUMENTS, INC.
www.fieldenvironmental.com

301 Brushton Avenue
Suite A
Pittsburgh PA 15221
800-393-4009 Toll Free
(412) 436-2600 Local
(412) 436-2616 Fax

Bladder Pump Calibration Certificate

Controller Testing:

Refill Time	10	sec
Discharge Time	5	sec
Throttle	10	psi

Regulator Testing:

Max Regulator PSI	
Regulator PSI Setting	

Controller: MP50 ☐ Solenoid Function Check
Controller S/N: 60412

Max PSI Achieved: 100

Air Source: Well Wizard
Air Source S/N: n/a

mL per cycle: 120.00 (80-120)

Pump Model: 1.75 ☑ Portable ☑ Pump decontaminated and cleaned
Pump S/N: 11702
Order #: 262266

Calibrated By: Rodrick Keels

Date of Calibration: 09/15/14

All calibrations performed by Field Environmental Instruments conform to manufacturer's specifications.
Any problems must be reported to Field Environmental within 24 hours of receiving equipment.

AECOM Environment

710 Second Avenue Suite 1000, Seattle WA 98104
T 206.624.9349 F 206.623.3793 www.aecom.com

AECOM

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: _____ Project Activities: Semi-Annual GW Sampling.

Project Name: YVC

Presented By: Abdelghani Selbaoui Date: 09/16/14

Topics Discussed:	Client Specific Topics:
☑ Contents of Site HASP	☐
☑ Review JSAs/THAs	
☑ Stop Work Authority	☐
☑ Site Safety Officer: Abdelghani Selbaoui	☐

Required PPE:

- ☑ Steel Toe Boots
- ☑ Hard Hat
- ☑ Traffic Vest
- ☑ Safety Glasses
- ☑ Nitrile Gloves
- ☐ Hearing Protection
- ☑ Long Sleeves
- ☑ Long Pants
- ☑ Knee Pads
- ☐ Other:

Contaminants of Concern:

- ☑ Petroleum Products
- ☑ Other: VOCs, Metals

Fitness for Duty:

- ☐ Are there any preexisting physical conditions that would prevent field staff from performing their assigned tasks

Emergency Procedures:

Meeting Location: Uhaul office

Nearest Hospital: Yakima Medical center

Safety Equipment Locations:

- ☑ First Aid Kit:
- ☑ Eye Wash Station:
- ☑ Fire Extinguisher:

Driving:

- ☑ Accidents are costly
- ☑ Back up safely
- ☑ Cell phone use not permitted
- ☑ All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- ☑ Clean as We Go
- ☑ Location to Store Drums: Inside Uhaul.

Weather: Sunny 88°F.

Traffic Control Plan:

- ☑ Cones/Barricades
- ☐ Other:

Physical Hazards:

- ☑ Slips, Trips and Falls
- ☑ Safe Lifting Technique
- ☑ Pinch Points
- ☑ Biological
- ☐ Other:

☐ Afternoon Safety Break Topics: _____

☑ Site Specific Hazards: Traffic

Attendees:

Name	Signature	Company
Abdelghani Selbaoui	Abdelghani Selbaoui	AECOM

AECOM Environment

710 Second Avenue Suite 1000, Seattle WA 98104
T 206.624.9349 F 206.623.3793 www.aecom.com

AECOM

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: _____ Project Activities: Semi-Annual GW Sampling.

Project Name: YVS

Presented By: Abdelghani Sebbane Date: 09/17/14

Topics Discussed:	Client Specific Topics:
☑ Contents of Site HASP	☐
☑ Review JSAs/THAs	
☑ Stop Work Authority	☐
☑ Site Safety Officer: Abdelghani Sebbane	☐

Required PPE:

☑ Steel Toe Boots ☐ Hard Hat ☑ Traffic Vest ☑ Safety Glasses ☑ Nitrile Gloves ☑ Hearing Protection ☑ Long Sleeves ☑ Long Pants ☑ Knee Pads ☐ Other:	**Emergency Procedures:** Meeting Location: U-haul Front building Nearest Hospital: Yakima Hospital **Safety Equipment Locations:** ☑ First Aid Kit: ☑ Eye Wash Station: ☑ Fire Extinguisher: **Driving:** ☑ Accidents are costly ☑ Back up safely ☑ Cell phone use not permitted	**General Housekeeping:** ☑ Clean as We Go ☑ Location to Store Drums: Inside building **Weather:** partly cloudy 65-88°F **Traffic Control Plan:** ☑ Cones/Barricades ☐ Other: **Physical Hazards:** ☑ Slips, Trips and Falls ☑ Safe Lifting Technique ☑ Pinch Points ☑ Biological ☐ Other:
Contaminants of Concern: ☑ Petroleum Products ☑ Other: VOCs - Metals		
Fitness for Duty: ☐ Are there any preexisting physical conditions that would prevent field staff from performing their assigned tasks	☑ All Onsite Equipment / Vehicles Inspected Prior to Work	

☐ Afternoon Safety Break Topics: _____

☑ Site Specific Hazards: Traffic

Attendees:

Name	Signature	Company
Abdelghani Sebbane	Abdelghani Sebbane	AECOM

Attachment B

Laboratory Analytical Results and Data Validation Report

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 03, 2014

Jason Palmer
AECOM
710 2nd Ave, Suite 1000
Seattle, WA 98108

RE: Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Dear Jason Palmer:
Enclosed are the analytical results for sample(s) received by the laboratory on September 18, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carol Davy
carol.davy@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #: Pace
Georgia Certification #: 959
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
Wisconsin Certification #: 999407970
West Virginia Certification #: 382
West Virginia DHHR #:9952C

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10282116001	**MW-12-0914**	Water	09/16/14 12:55	09/18/14 10:00
10282116002	**BG-90-0914**	Water	09/16/14 17:30	09/18/14 10:00
10282116003	**BG-60-0914**	Water	09/16/14 14:20	09/18/14 10:00
10282116004	**YVS-3-0914**	Water	09/16/14 15:25	09/18/14 10:00
10282116005	**YVS-3-60-0914**	Water	09/16/14 16:20	09/18/14 10:00
10282116006	**YVS-3-90-0914**	Water	09/16/14 16:55	09/18/14 10:00
10282116007	**MW-6-0914**	Water	09/17/14 10:00	09/18/14 10:00
10282116008	**YS-1-0914**	Water	09/17/14 11:10	09/18/14 10:00
10282116009	**YVS-1b-0914**	Water	09/17/14 12:00	09/18/14 10:00
10282116010	**YVS-2-0914**	Water	09/17/14 12:45	09/18/14 10:00
10282116011	**YVS-20-0914**	Water	09/17/14 13:30	09/18/14 10:00
10282116012	**TB-0914**	Water	09/16/14 00:00	09/18/14 10:00

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10282116001	**MW-12-0914**	EPA 8260	SH2	4	PASI-M
10282116002	**BG-90-0914**	EPA 8260	SH2	4	PASI-M
10282116003	**BG-60-0914**	EPA 8260	SH2	4	PASI-M
10282116004	**YVS-3-0914**	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 200.8	TT3	1	PASI-M
		EPA 8260	SH2	5	PASI-M
10282116005	**YVS-3-60-0914**	EPA 8260	SH2	4	PASI-M
10282116006	**YVS-3-90-0914**	EPA 8260	SH2	4	PASI-M
10282116007	**MW-6-0914**	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 200.8	TT3	1	PASI-M
		EPA 8260	AJC	5	PASI-M
10282116008	**YS-1-0914**	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 200.8	TT3	1	PASI-M
		EPA 8260	AJC	5	PASI-M
10282116009	**YVS-1b-0914**	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 200.8	TT3	1	PASI-M
		EPA 8260	AJC	5	PASI-M
10282116010	**YVS-2-0914**	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 200.8	TT3	1	PASI-M
		EPA 8260	AJC	5	PASI-M
10282116011	**YVS-20-0914**	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 200.8	TT3	1	PASI-M
		EPA 8260	AJC	5	PASI-M
10282116012	**TB-0914**	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 8260	SH2	5	PASI-M

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Method: **NWTPH-Gx/8021**
Description: NWTPH-Gx GCV
Client: AECOM Washington
Date: October 03, 2014

General Information:
7 samples were analyzed for NWTPH-Gx/8021. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.
- TB-0914 (Lab ID: 10282116012)
- YVS-3-0914 (Lab ID: 10282116004)

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Method: **EPA 200.8**
Description: 200.8 MET ICPMS, Dissolved
Client: AECOM Washington
Date: October 03, 2014

General Information:
6 samples were analyzed for EPA 200.8. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Method: **EPA 8260**
Description: 8260 VOC
Client: AECOM Washington
Date: October 03, 2014

General Information:
12 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/28633

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10281962007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1797350)
  - Benzene
- MSD (Lab ID: 1797351)
  - Benzene

QC Batch: MSV/28659

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10282116007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1796681)
  - Benzene
- MSD (Lab ID: 1796682)
  - Benzene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Method: **EPA 8260**
Description: 8260 VOC
Client: AECOM Washington
Date: October 03, 2014

Analyte Comments:

QC Batch: MSV/28633

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 1797350)
  - Benzene
- MSD (Lab ID: 1797351)
  - Benzene

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Sample: MW-12-0914 **Lab ID: 10282116001** Collected: 09/16/14 12:55 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Tetrachloroethene	**36.9**	ug/L	1.0	0.16	1		09/22/14 19:27	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		09/22/14 19:27	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		09/22/14 19:27	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125		1		09/22/14 19:27	460-00-4	

Sample: BG-90-0914 **Lab ID: 10282116002** Collected: 09/16/14 17:30 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Tetrachloroethene	**3.6**	ug/L	1.0	0.16	1		09/22/14 19:41	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		09/22/14 19:41	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		09/22/14 19:41	2037-26-5	
4-Bromofluorobenzene (S)	106	%.	75-125		1		09/22/14 19:41	460-00-4	

Sample: BG-60-0914 **Lab ID: 10282116003** Collected: 09/16/14 14:20 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Tetrachloroethene	**21.4**	ug/L	1.0	0.16	1		09/22/14 19:55	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		09/22/14 19:55	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		09/22/14 19:55	2037-26-5	
4-Bromofluorobenzene (S)	107	%.	75-125		1		09/22/14 19:55	460-00-4	

Sample: YVS-3-0914 **Lab ID: 10282116004** Collected: 09/16/14 15:25 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	ND	ug/L	100	50.0	1		10/01/14 11:50		H1
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%.	70-125		1		10/01/14 11:50	98-08-8	
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Arsenic, Dissolved	ND	ug/L	0.50	0.25	1	09/30/14 13:07	10/02/14 21:33	7440-38-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Sample: YVS-3-0914 **Lab ID: 10282116004** Collected: 09/16/14 15:25 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.15	1		09/22/14 20:10	71-43-2	
Tetrachloroethene	**1.4**	ug/L	1.0	0.16	1		09/22/14 20:10	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125		1		09/22/14 20:10	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		09/22/14 20:10	2037-26-5	
4-Bromofluorobenzene (S)	107	%.	75-125		1		09/22/14 20:10	460-00-4	

Sample: YVS-3-60-0914 **Lab ID: 10282116005** Collected: 09/16/14 16:20 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Tetrachloroethene	**32.3**	ug/L	1.0	0.16	1		09/22/14 20:24	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		09/22/14 20:24	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		09/22/14 20:24	2037-26-5	
4-Bromofluorobenzene (S)	108	%.	75-125		1		09/22/14 20:24	460-00-4	

Sample: YVS-3-90-0914 **Lab ID: 10282116006** Collected: 09/16/14 16:55 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Tetrachloroethene	ND	ug/L	1.0	0.16	1		09/22/14 20:38	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%.	75-125		1		09/22/14 20:38	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		09/22/14 20:38	2037-26-5	
4-Bromofluorobenzene (S)	110	%.	75-125		1		09/22/14 20:38	460-00-4	

Sample: MW-6-0914 **Lab ID: 10282116007** Collected: 09/17/14 10:00 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	ND	ug/L	100	50.0	1		10/01/14 13:50		
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%.	70-125		1		10/01/14 13:50	98-08-8	
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Arsenic, Dissolved	ND	ug/L	0.50	0.25	1	09/30/14 13:07	10/02/14 21:36	7440-38-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Sample: MW-6-0914 **Lab ID: 10282116007** Collected: 09/17/14 10:00 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.15	1		09/23/14 11:10	71-43-2	M1
Tetrachloroethene	**5.7**	ug/L	1.0	0.16	1		09/23/14 11:10	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%.	75-125		1		09/23/14 11:10	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		09/23/14 11:10	2037-26-5	
4-Bromofluorobenzene (S)	106	%.	75-125		1		09/23/14 11:10	460-00-4	

Sample: YS-1-0914 **Lab ID: 10282116008** Collected: 09/17/14 11:10 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	ND	ug/L	100	50.0	1		10/01/14 13:30		
Surrogates									
a,a,a-Trifluorotoluene (S)	104	%.	70-125		1		10/01/14 13:30	98-08-8	
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Arsenic, Dissolved	**0.58**	ug/L	0.50	0.25	1	09/30/14 13:07	10/03/14 10:32	7440-38-2	
8260 VOC	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.15	1		09/23/14 17:50	71-43-2	
Tetrachloroethene	ND	ug/L	1.0	0.16	1		09/23/14 17:50	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1		09/23/14 17:50	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		09/23/14 17:50	2037-26-5	
4-Bromofluorobenzene (S)	105	%.	75-125		1		09/23/14 17:50	460-00-4	

Sample: YVS-1b-0914 **Lab ID: 10282116009** Collected: 09/17/14 12:00 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	ND	ug/L	100	50.0	1		10/01/14 13:10		
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%.	70-125		1		10/01/14 13:10	98-08-8	
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Arsenic, Dissolved	**0.78**	ug/L	0.50	0.25	1	09/30/14 13:07	10/03/14 10:35	7440-38-2	
8260 VOC	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.15	1		09/23/14 18:05	71-43-2	
Tetrachloroethene	**30.3**	ug/L	1.0	0.16	1		09/23/14 18:05	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Sample: YVS-1b-0914 **Lab ID: 10282116009** Collected: 09/17/14 12:00 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1		09/23/14 18:05	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		09/23/14 18:05	2037-26-5	
4-Bromofluorobenzene (S)	107	%.	75-125		1		09/23/14 18:05	460-00-4	

Sample: YVS-2-0914 **Lab ID: 10282116010** Collected: 09/17/14 12:45 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	ND	ug/L	100	50.0	1		10/01/14 12:30		
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%.	70-125		1		10/01/14 12:30	98-08-8	
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Arsenic, Dissolved	ND	ug/L	0.50	0.25	1	09/30/14 13:07	10/03/14 10:38	7440-38-2	
8260 VOC	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.15	1		09/23/14 18:19	71-43-2	
Tetrachloroethene	**13.3**	ug/L	1.0	0.16	1		09/23/14 18:19	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%.	75-125		1		09/23/14 18:19	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1		09/23/14 18:19	2037-26-5	
4-Bromofluorobenzene (S)	105	%.	75-125		1		09/23/14 18:19	460-00-4	

Sample: YVS-20-0914 **Lab ID: 10282116011** Collected: 09/17/14 13:30 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	ND	ug/L	100	50.0	1		10/01/14 12:50		
Surrogates									
a,a,a-Trifluorotoluene (S)	105	%.	70-125		1		10/01/14 12:50	98-08-8	
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Arsenic, Dissolved	ND	ug/L	0.50	0.25	1	09/30/14 13:07	10/03/14 10:40	7440-38-2	
8260 VOC	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.15	1		09/23/14 18:33	71-43-2	
Tetrachloroethene	**13.1**	ug/L	1.0	0.16	1		09/23/14 18:33	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1		09/23/14 18:33	17060-07-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Sample: YVS-20-0914 **Lab ID: 10282116011** Collected: 09/17/14 13:30 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Surrogates									
Toluene-d8 (S)	103	%.	75-125		1		09/23/14 18:33	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125		1		09/23/14 18:33	460-00-4	

Sample: TB-0914 **Lab ID: 10282116012** Collected: 09/16/14 00:00 Received: 09/18/14 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	ND	ug/L	100	50.0	1		10/01/14 12:10		H1
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%.	70-125		1		10/01/14 12:10	98-08-8	
8260 VOC	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.15	1		09/22/14 17:47	71-43-2	
Tetrachloroethene	ND	ug/L	1.0	0.16	1		09/22/14 17:47	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-125		1		09/22/14 17:47	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1		09/22/14 17:47	2037-26-5	
4-Bromofluorobenzene (S)	107	%.	75-125		1		09/22/14 17:47	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

QC Batch: GCV/12672 Analysis Method: NWTPH-Gx/8021
QC Batch Method: NWTPH-Gx/8021 Analysis Description: NWTPH-Gx/8021B Water
Associated Lab Samples: 10282116004, 10282116007, 10282116008, 10282116009, 10282116010, 10282116011, 10282116012

METHOD BLANK: 1801747 Matrix: Water
Associated Lab Samples: 10282116004, 10282116007, 10282116008, 10282116009, 10282116010, 10282116011, 10282116012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	10/01/14 11:30	
a,a,a-Trifluorotoluene (S)	%.	104	70-125	10/01/14 11:30	

METHOD BLANK: 1801752 Matrix: Water
Associated Lab Samples: 10282116004, 10282116007, 10282116008, 10282116009, 10282116010, 10282116011, 10282116012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	10/01/14 15:10	
a,a,a-Trifluorotoluene (S)	%.	106	70-125	10/01/14 15:10	

LABORATORY CONTROL SAMPLE & LCSD: 1801748 1801749

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1030	1020	103	102	75-125	2	20	
a,a,a-Trifluorotoluene (S)	%.				106	108	70-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1801750 1801751

Parameter	Units	10282116007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	ND	1000	1000	1010	1070	101	106	52-150	5	30	
a,a,a-Trifluorotoluene (S)	%.						108	104	70-125			

SAMPLE DUPLICATE: 1805776

Parameter	Units	10280916003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	2370	2210	7	30	H1
a,a,a-Trifluorotoluene (S)	%.	106	106	0		

SAMPLE DUPLICATE: 1805777

Parameter	Units	10282437001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	74.1J		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

SAMPLE DUPLICATE: 1805777

Parameter	Units	10282437001 Result	Dup Result	RPD	Max RPD	Qualifiers
a,a,a-Trifluorotoluene (S)	%.	107	107	0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

QC Batch: MPRP/49273 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET Dissolved
Associated Lab Samples: 10282116004, 10282116007, 10282116008, 10282116009, 10282116010, 10282116011

METHOD BLANK: 1797630 Matrix: Water
Associated Lab Samples: 10282116004, 10282116007, 10282116008, 10282116009, 10282116010, 10282116011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	10/02/14 20:18	

LABORATORY CONTROL SAMPLE: 1797631

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	80	84.1	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1797632 1797633

Parameter	Units	10282011022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	3.0	80	80	90.2	95.2	109	115	70-130	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1797634 1797635

Parameter	Units	10282116007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	ND	80	80	83.6	84.4	104	105	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

QC Batch: MSV/28633 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 465 W
Associated Lab Samples: 10282116001, 10282116002, 10282116003, 10282116004, 10282116005, 10282116006, 10282116012

METHOD BLANK: 1795523 Matrix: Water
Associated Lab Samples: 10282116001, 10282116002, 10282116003, 10282116004, 10282116005, 10282116006, 10282116012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/22/14 16:21	
Tetrachloroethene	ug/L	ND	1.0	09/22/14 16:21	
1,2-Dichloroethane-d4 (S)	%.	98	75-125	09/22/14 16:21	
4-Bromofluorobenzene (S)	%.	105	75-125	09/22/14 16:21	
Toluene-d8 (S)	%.	103	75-125	09/22/14 16:21	

LABORATORY CONTROL SAMPLE: 1795524

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	21.6	108	75-125	
Tetrachloroethene	ug/L	20	19.9	99	71-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			104	75-125	
Toluene-d8 (S)	%.			102	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1797350 1797351

Parameter	Units	10281962007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	2960	200	200	3590	3410	314	227	75-129	5	30	E,M1
Tetrachloroethene	ug/L	ND	200	200	142	136	71	68	68-140	4	30	
1,2-Dichloroethane-d4 (S)	%.						98	94	75-125			
4-Bromofluorobenzene (S)	%.						104	103	75-125			
Toluene-d8 (S)	%.						102	101	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

QC Batch: MSV/28659 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 465 W
Associated Lab Samples: 10282116007, 10282116008, 10282116009, 10282116010, 10282116011

METHOD BLANK: 1796679 Matrix: Water
Associated Lab Samples: 10282116007, 10282116008, 10282116009, 10282116010, 10282116011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/23/14 10:19	
Tetrachloroethene	ug/L	ND	1.0	09/23/14 10:19	
1,2-Dichloroethane-d4 (S)	%.	92	75-125	09/23/14 10:19	
4-Bromofluorobenzene (S)	%.	103	75-125	09/23/14 10:19	
Toluene-d8 (S)	%.	103	75-125	09/23/14 10:19	

LABORATORY CONTROL SAMPLE: 1796680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.6	98	75-125	
Tetrachloroethene	ug/L	20	20.7	104	71-125	
1,2-Dichloroethane-d4 (S)	%.			92	75-125	
4-Bromofluorobenzene (S)	%.			103	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1796681 1796682

Parameter	Units	10282116007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	14.4	13.6	72	68	75-129	6	30	M1
Tetrachloroethene	ug/L	5.7	20	20	19.4	19.8	68	71	68-140	2	30	
1,2-Dichloroethane-d4 (S)	%.						95	93	75-125			
4-Bromofluorobenzene (S)	%.						102	103	75-125			
Toluene-d8 (S)	%.						99	102	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60241030-0200 Yakima Valley Sp
Pace Project No.: 10282116

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10282116004	**YVS-3-0914**	NWTPH-Gx/8021	GCV/12672		
10282116007	**MW-6-0914**	NWTPH-Gx/8021	GCV/12672		
10282116008	**YS-1-0914**	NWTPH-Gx/8021	GCV/12672		
10282116009	**YVS-1b-0914**	NWTPH-Gx/8021	GCV/12672		
10282116010	**YVS-2-0914**	NWTPH-Gx/8021	GCV/12672		
10282116011	**YVS-20-0914**	NWTPH-Gx/8021	GCV/12672		
10282116012	**TB-0914**	NWTPH-Gx/8021	GCV/12672		
10282116004	**YVS-3-0914**	EPA 200.8	MPRP/49273	EPA 200.8	ICPM/21957
10282116007	**MW-6-0914**	EPA 200.8	MPRP/49273	EPA 200.8	ICPM/21957
10282116008	**YS-1-0914**	EPA 200.8	MPRP/49273	EPA 200.8	ICPM/21957
10282116009	**YVS-1b-0914**	EPA 200.8	MPRP/49273	EPA 200.8	ICPM/21957
10282116010	**YVS-2-0914**	EPA 200.8	MPRP/49273	EPA 200.8	ICPM/21957
10282116011	**YVS-20-0914**	EPA 200.8	MPRP/49273	EPA 200.8	ICPM/21957
10282116001	**MW-12-0914**	EPA 8260	MSV/28633		
10282116002	**BG-90-0914**	EPA 8260	MSV/28633		
10282116003	**BG-60-0914**	EPA 8260	MSV/28633		
10282116004	**YVS-3-0914**	EPA 8260	MSV/28633		
10282116005	**YVS-3-60-0914**	EPA 8260	MSV/28633		
10282116006	**YVS-3-90-0914**	EPA 8260	MSV/28633		
10282116007	**MW-6-0914**	EPA 8260	MSV/28659		
10282116008	**YS-1-0914**	EPA 8260	MSV/28659		
10282116009	**YVS-1b-0914**	EPA 8260	MSV/28659		
10282116010	**YVS-2-0914**	EPA 8260	MSV/28659		
10282116011	**YVS-20-0914**	EPA 8260	MSV/28659		
10282116012	**TB-0914**	EPA 8260	MSV/28633		

REPORT OF LABORATORY ANALYSIS

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical® www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10282116

1834954

Section A Required Client Information:

Company:	AECOM
Address:	710 2nd Ave. Suite 1000 Seattle WA 98104
Email To:	Jason.Palmer@aecom.com
Phone:	206-624-9349 Fax:
Requested Due Date/TAT:	7

Section B Required Project Information:

Report To:	Jason Palmer
Copy To:	
Purchase Order No.:	
Project Name:	Yakima Valley Spray
Project Number:	602410300-0200

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Carol Dary
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: Yakima WA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	PCE 8260	Benzene 8260	NW TPH-Gx	Arsenic 200.8	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-12-0914	W		09/16	1255			18	3				X						X						001
2	BG-90-0914	W		09/16	1730			18	3				X						X						002
3	BG-60-0914	W		09/16	1420			18	3				X						X						003
4	YVS-3-0914	W		09/16	1525			18	7			X	X						X	X	X	X			004
5	YVS-3-60-0914	W		09/16	1620			18	3				X						X						005
6	YVS-3-90-0914	W		09/16	1655			18	3				X						X						006
7	MW-6-0914	W		09/17	1000			19	21			X	X						X	X	X	X			MS/MSD 007
8	YS-1-0914	W		09/17	1110			19	7			X	X						X	X	X	X			008
9	YVS-16-0914	W		09/17	1200			18	7			X	X						X	X	X	X			009
10	YVS-2-0914	W		09/17	1245			20	7			X	X						X	X	X	X			010
11	YVS-20-0914	W		09/17	1330			20	7			X	X						X	X	X	X			011
12	TB-0914	W		—	—				2										X	X	X				012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Arsenic is Field Filtered.	Abdelghani Sebbani	9/17/14	1430	FDX Pace	9/18/14	1000	0.6	4	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Abdelghani Sebbani

SIGNATURE of SAMPLER: Abdelghani Sebbani DATE Signed (MM/DD/YY): 9/17/14

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Feb2014 Page 1 of 1
	Document No.: F-MN-L-213-rev.09	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: AECOM

Project #: WO# : 10282116

10282116

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 579533212 60

Custody Seal on Cooler/Box Present: ☐ Yes ☒ No **Seals Intact:** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermom. Used: ☐ B88A9130516413 ☒ B88A912167504 ☐ B88A9132521491 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 0.3 **Cooler Temp Corrected (°C):** 0.6

Temp should be above freezing to 6°C **Correction Factor:** +0.3

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Date and Initials of Person Examining Contents: 7/29/14 TM

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12. 7 3/3
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 4,8-11 1/1
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☒ Yes	☐ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14.
Trip Blank Present?	☒ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☒ No	☐ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: CMO **Date:** 9-19-14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

AECOM Environment

Submitted to:
Yakima Valley Spray
Yakima, WA

Submitted by:
AECOM
Pittsburgh PA
60241030-0300
October 2014

October 10, 2014

Organic and Inorganic Data Validation Report

Yakima Valley Spray Site Groundwater Samples Pace Analytical Services, Inc. Data September 2014

Prepared By Gregory A. Malzone
Project Chemist

Overview

The Yakima Valley Spray Site groundwater samples collected duing the September 16-17, 2014 sampling event are listed in the Table of Samples Analyzed (page 3). Limited data validation was performed for a total of eleven groundwater samples, including one field duplicate, and one trip blank.

The following analyses were requested on the chain-of-custody (CoC) records.

- NWTPH-Gx/8021 – Volatile Total Petroleum Hydrocarbons using USEPA SW-846 Method 8021 (GC/FID/PID)
- Benzene and Tetrachloroethene (PCE) by USEPA SW-846 Method 8260B
- Dissolved Arsenic by USEPA Method 200.8 (ICP-MS)

All analyses were performed by Pace Analytical Services, Inc., 1700 Elm Street - Suite 200. Minneapolis, MN 55414 (Pace-MN).

The Analytical Limited Data Validation Checklist is presented as pages 4-8. The data were evaluated based on method specifications and qualifiers were assigned using the validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review*, USEPA-540-R-07-003, July 2008, with additional reference to *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540/R-99-008, May 1999, and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*, USEPA-540-R-10-011, January 2010, as they apply to the analytical methods employed. Field duplicate RPD review and applicable control limits were taken from the *USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, December 1996.

The following data components were reviewed during the limited data validation procedure:

Submitted Deliverables
Case Narratives (including laboratory flags)
Chain-of-Custody form(s) and sample integrity
Sample results, reporting detection limits, dilution factors
Holding times
Method blank results
Organic surrogate recoveries
LCS, LCSD (blank spike, blank spike duplicate) recoveries
Laboratory duplicate RPDs
Field duplicate data (calculated RPDs)
Electronic data deliverable (EDD) query

Data Validation Qualifiers Assigned During this Review

UJ: The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.

Overall Data Assessment

Precision, accuracy, and method compliance have been determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications noted.

Table of Samples Analyzed
Yakima Valley Groundwater Samples
Pace Analytical (Pace-Minneapolis) Laboratory Report 10282116
September 16-17, 2014

Matrix	Sample ID	QC	Sample Date and Time		Lab SDG	Lab Sample ID
Water	MW-12-0914		9/16/2014	12:55	10282116	10282116001
Water	BG-90-0914		9/16/2014	17:30	10282116	10282116002
Water	BG-60-0914		9/16/2014	14:20	10282116	10282116003
Water	YVS-3-0914		9/16/2014	15:25	10282116	10282116004
Water	YVS-3-60-0914		9/16/2014	16:20	10282116	10282116005
Water	YVS-3-90-0914		9/16/2014	16:55	10282116	10282116006
Water	MW-6-0914	MS/MSD	9/17/2014	10:00	10282116	10282116007
Water	YS-1-0914		9/17/2014	11:10	10282116	10282116008
Water	YVS-1b-0914		9/17/2014	12:00	10282116	10282116009
Water	YVS-2-0914		9/17/2014	12:45	10282116	10282116010
Water (QC)	YVS-20-0914	YVS-2-0914	9/17/2014	13:30	10282116	10282116011
Water (QC)	TB-0914	trip blank	9/17/2014	-	10282116	10282116012

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Project Name: Yakima Valley Spray Site	Laboratories: Pace-MN and Pace-LA
Project Reference: Groundwater Samples	Sample Matrix: Groundwater and Aqueous QC Samples
AECOM Project: 60241030-0300	Sample Start Date: 09/16/2014
Validator/Date Validated: Greg Malzone 10/10/2014 (completed)	Sample End Date: 09/17/2014

Samples Analyzed: see Table of Samples Analyzed, Yakima Valley Spray Groundwater Samples, September 16-17, 2014 (page 3).

Parameters Reviewed:

- NWTPH-Gx/8021 – Volatile Total Petroleum Hydrocarbons using USEPA SW-846 Method 8021 (GC/FID/PID)
- Benzene and Tetrachloroethene (PCE) by USEPA SW-846 Method 8260B
- Dissolved Arsenic by USEPA Method 200.8 (ICP-MS)

Laboratory Project ID (SDG): 10282116

PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT

Precision:	**X**	Acceptable		Unacceptable	GAM	Initials

Comments: Precision is the measure of variability of individual sample measurements. Field precision was determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of field and laboratory duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. RPD precision measurements were compared to EPA published and/or laboratory control-charted QC limits. Overall field and laboratory precision were acceptable because no data points were qualified in response to failing precision measurements. Precision measurements are reviewed in items 17 and 21.

Accuracy:	**X**	Acceptable		Unacceptable	GAM	Initials

Comments: Field accuracy, a measure of the sampling bias, was determined by reviewing trip blank results for evidence of sample contamination stemming from sample transport. Laboratory accuracy is a measure of the system bias, and was measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD), and organic system monitoring compounds (surrogate) percent recoveries (%Rs). LCS/LCSD %Rs, which demonstrated the overall performance of the analysis, were compared to EPA published QC limits. MS/MSD %Rs, which provided information on sample matrix interferences, were compared to EPA published QC limits or laboratory control charted limits. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to EPA published QC limits or laboratory control charted limits. Although one data point required qualification based on a matix spike recovery outlier (see item 16), overall field and laboratory accuracy is acceptable. Accuracy measurements are reviewed in items 11, 12, 14, 15, 16, and 20.

Method Compliance:	**X**	Acceptable		Unacceptable	GAM	Initials

Comments: For this data set, method compliance was determined by evaluating sample integrity, holding time, and reporting limits against method specified requirements. Two TPH results required qualification because the holding time had lapsed (see item 8). Overall method compliance was acceptable based on the data submitted. Method compliance measurements are reviewed in items 4, 6, 8, 13, 18, 19, 20, and 22.

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Completeness:	X	Acceptable		Unacceptable	GAM	Initials
Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Completeness goals were set at 90-100%. Determination of completeness during this limited data validation procedure included a review of chain of custody records, laboratory analytical methods and detection limits, laboratory case narratives, and project requirements. Completeness also included 100% review of the laboratory sample data results and QC summary reports. All data received are useable with some qualification. No data points were missing or rejected. Completeness of the groundwater data set was 100%.						
VALIDATION CRITERIA CHECK						
1. Did the laboratory identify any non-conformances related to the analytical results?	X	Yes		No	GAM	Initials
Comments: The laboratory identified the following issues in the case narrative regarding the project samples. NWTPH-Gx/8021: Samples YVS-3-0914 and TB-0914 were analyzed outside the method-specified holding time. EPA 8260B: The MW-6-0914 MS/MSD recoveries for benzene were outside the acceptance limits.						
2. Were sample Chain-of-Custody forms complete?	X	Yes		No	GAM	Initials
Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, and laboratory dates and times of sample receipt.						
3. Were all the analyses requested for the samples on the CoCs completed by the laboratory?	X	Yes		No	GAM	Initials
Comments: All requested analyses as documented on the original CoC were completed.						
4. Were samples received in good condition and at the appropriate temperature?	X	Yes		No	GAM	Initials
Comments: All samples were received intact, properly preserved and in good condition with a cooler temperature of 0.6° C as noted on the Sample Condition Upon Receipt Form provided. The samples were received outside the optimal temperature range of 4±2° C. Samples received at less than 2°C were determined to be in acceptable condition because sample containers were intact and samples themselves were not frozen. The samples for dissolved arsenic were filtered and chemically preserved in the field.						
5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	X	Yes		No	GAM	Initials
Comments: The reported methods met the COC requests and were in compliance with the parameters requested and the sample matrix.						
6. Were detection limits in accordance with WP/QAPP, permit, or method?	X	Yes		No	GAM	Initials
Comments: The reporting limits (RLs) are achievable by the quoted methods. Analytical results were reported to the method detection limit (MDL).						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	X	Yes		No	GAM	Initials
Comments: Only analytes applicable to the requested method were reported.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

8. Were all sample holding times met?		Yes	**X**	No	GAM	Initials
Comments: The method-specified sample extraction and analytical holding times were met for all samples with the following exception. NWTPH-Gx/8021: **Samples YVS-3-0914 and TB-0914 were analyzed one day outside the method-specified 14-day holding time. The TPH results for samples YVS-3-0914 and TB-0914 were non-detect and were qualified "UJ," as estimates, biased low because the holding time was exceeded.**						
9. Were correct concentration units reported?	**X**	Yes		No	GAM	Initials
Comments: All organic and arsenic sample results were reported in µg/L (ppb).						
10. Were the reporting requirements for flagged data met?	**X**	Yes		No	GAM	Initials
Comments: All assigned laboratory flags were reviewed and evaluated during the limited validation process. Data validation qualifiers supersede any assigned laboratory data flags.						
11. Were laboratory blank samples free of target analyte contamination?	**X**	Yes		No	GAM	Initials
Comments: The method blank samples were free of target analyte contamination at the method detection limits.						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?	**X**	Yes		No	GAM	Initials
Comments: No target compounds/analytes were detected in the trip blank sample at the method detection limits.						
13. Were instrument calibrations within method or data validation control limits?	**NA**	Yes	**NA**	No	GAM	Initials
Comments: Not applicable for this level of limited data validation – Instrument calibration data were not supplied in analytical laboratory reports and are therefore not included in this data review.						
14. Were surrogate recoveries within control limits?	**X**	Yes		No	GAM	Initials
Comments: Surrogate recoveries for organic analyses were within laboratory control-charted QC limits for all project samples and associated QC samples.						
15. Were laboratory control sample recoveries within control limits?	**X**	Yes		No	GAM	Initials
Comments: Reported LCS and LCSD recoveries were within laboratory control-charted QC limits for all project samples and associated QC samples.						
16. Were matrix spike recoveries within control limits?		Yes	**X**	No	GAM	Initials
Comments: Sample MW-6-0914 was designated in the field to be processed as the quality control sample (i.e., MS/MSD) for this sample set. All matrix spike recoveries were within the advisory limits with the following exception. EPA 8260B: **The MW-6-0914 matrix spike and matrix spike duplicate recoveries for benzene were less than the lower laboratory advisory limit, but greater than 20%. The benzene result for sample MW-6-0914 was non-detect and was qualified "UJ," as an estimate, because of low bias due to matrix effects.**						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

17. Were all duplicate RPDs within control limits?	**X**	Yes		No	GAM	Initials
Comments: Sample MW-6-0914 was designated in the field to be processed as the quality control sample (i.e., MS/MSD) for this sample set. Laboratory RPDs for target analytes in LCS/LCSD, MS/MSD, and project-specific laboratory replicate samples were within laboratory QC limits.						
18. Were organic system performance criteria met?	**NA**	Yes	**NA**	No	GAM	Initials
Comments: Not applicable for this level of limited data validation – Organic system performance data were not supplied in analytical laboratory reports and were therefore not included in this data review.						
19. Were internal standards within method criteria for GC/MS sample analyses?	**NA**	Yes	**NA**	No	GAM	Initials
Comments: Not applicable for this level of limited data validation or for the analytical method reported.						
20. Were inorganic system performance criteria met?	**NA**	Yes	**NA**	No	GAM	Initials
Comments: Not applicable for this level of limited data validation or for the analytical method reported.						
21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	**X**	Yes		No	GAM	Initials
Duplicate Sample No. YVS-20-0914		Primary Sample No. YVS-2-0914				

Comments: Field duplicate RPDs were within data validation QC limits of 0-30% for water matrices or were non-detect in both samples with the exception indicated in the table below. Field sampling/laboratory precision and sample homogeneity were acceptable. No data qualifications were required.

SDG	Method	Units	Analyte	YVS-2-0914	YVS-20-0914	RPD	Qualifiers
10282116	8260B	µg/L	Tetrachloroethene	13.3	13.1	1.5	

22. Were qualitative criteria for organic target analyte identification met?	**NA**	Yes	**NA**	No	GAM	Initials
Comments: Not applicable for this level of limited data validation – Chromatograms, library searches, and quantitation reports were not supplied in analytical laboratory reports and were therefore not included in this data review. No identification or quantitation outliers were noted by the laboratory.						
23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	**X**	Yes		No	GAM	Initials

Comments: 100% EDD QA/QC of positive concentrations and RLs was done as part of this limited data validation procedure. The following changes were made to the EDD file during data validation:

The data validator corrected any significant figure discrepancies between hardcopy report and EDD entries. According to validation protocol, the hardcopy data report was accepted as the correct reference.

The AECOM Environment database manager was informed of all changes made to the EDD file via this Checklist. The EDD file, with corrections made was returned to the database manager in Seattle, WA on 10/13/2014.

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

24. General Comments: The data were evaluated based on method specifications and the validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review*, USEPA-540-R-07-003, July 2008, with additional reference to *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540/R-99-008, May 1999, and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*, USEPA-540-R-10-011, January 2010, as they apply to the analytical methods employed. Field duplicate RPD review and applicable control limits were taken from the *USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, December 1996.

Table of Qualified Sample Results
Yakima Valley Spray Groundwater Samples
Pace Analytical (Pace-Minneapolis) Laboratory Report 10282116
September 16-17, 2014

Sample ID	Lab ID	Method	Dilution	Analyte	Reported Result			Qualifier	Reason Code
YVS-3-0914	10282116004	NWTPH-Gx/8021	1	TPH as Gas	<	100	µg/L	UJ	HT
TB-0914	10282116012	NWTPH-Gx/8021	1	TPH as Gas	<	100	µg/L	UJ	HT
MW-6-0914	10282116007	8260B	1	Benzene	<	1.0	µg/L	UJ	MS

(1): Data Validation Qualifiers:
UJ: The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.

(2): Reason Codes:
HT: The method-specified holding time to analysis was exceeded.
MS: The matrix spike recoveries were outside the advisory limits.