UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

October 4, 2011

Reply To: ECL-112

Michael J. Gage, Project Director
Bonneville Conservation, Restoration and Renewal Team, LLC
7655 Town Square Way Suite 214
Reno, Nevada 89523

Dear Mr. Gage:

The U. S. Environmental Protection Agency (EPA), through its contractor, Ecology and Environment, Inc., collected soil, ground water, and sediment samples from the Camp Bonneville site on May 16 through May 21, 2011. The samples were collected as part of EPA's Phase 1 site investigation field activities at the Camp Bonneville site. The samples were analyzed for volatile organic compounds, semivolatile organic compounds, nitroaromatics/nitroamines, perchlorate, and metals. The ground water samples were collected from existing on-site monitoring wells and hand-augered boreholes. Enclosed is a copy of the analytical results from the Phase 1 sampling activities. A sample location map is also provided.

As you are aware, EPA conducted Phase 2 field sampling activities in August 2011. Phase 2 field activities included the collection of soil, sediment, and surface water samples from locations at the site. The EPA anticipates that the analytical result tables and associated sample location maps for the Phase 2 work will be available by January 2012. Copies of the sample result tables and maps for the Phase 2 work will be made available as was done for the Phase 1 work. A report summarizing both Phase 1 and Phase 2 sample results will be prepared and is projected to be available by Spring 2012.

If you have any questions regarding EPA's site assessment process please feel free to contact me at (206) 553-0323.

Sincerely,

Monica Tonel

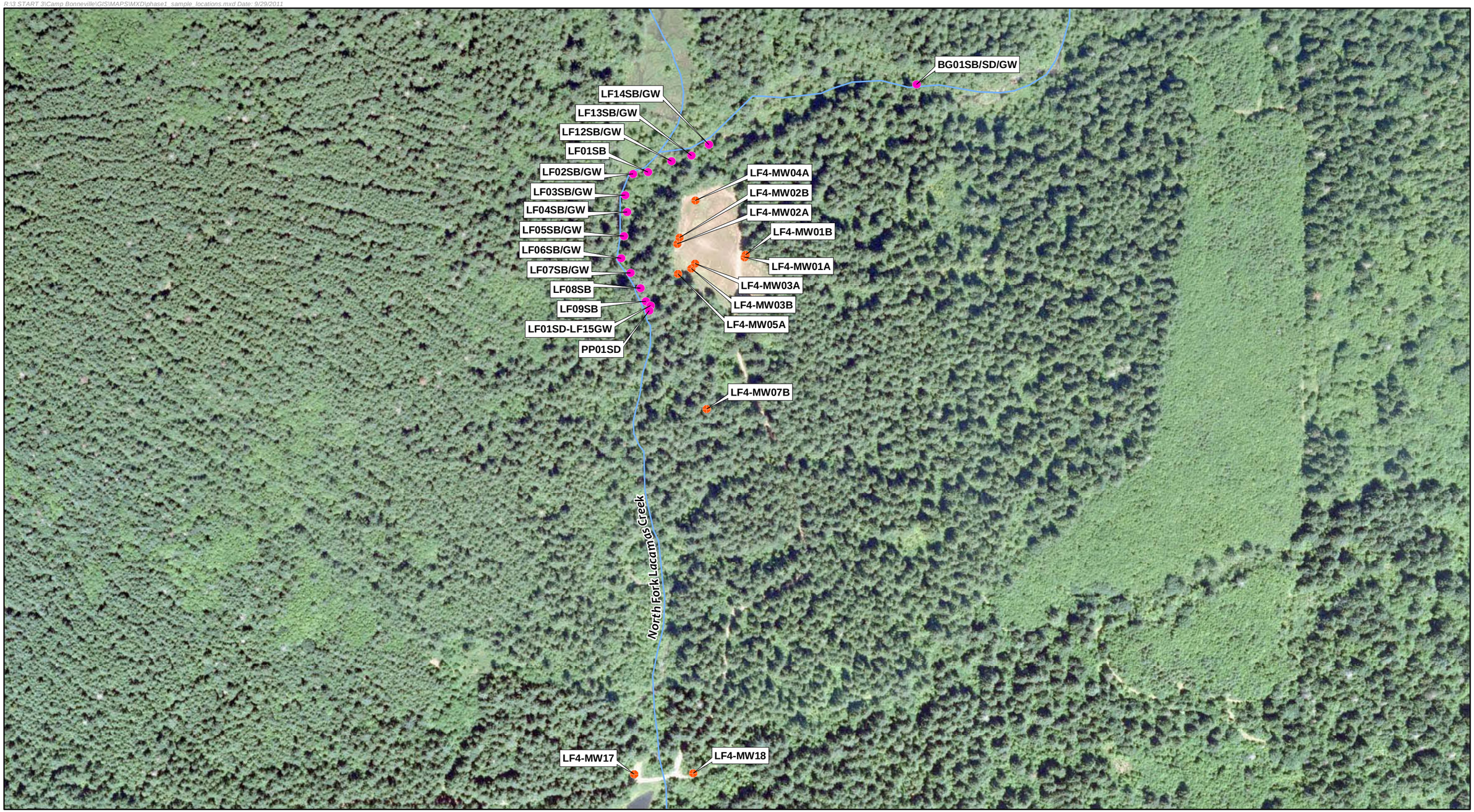
Monica Tonel, Site Assessment Manager
Office of Environmental Cleanup

Enclosures

w/ Enclosures

cc: Greg Johnson, Clark County Department of Public Works
Jerry Barnett, Clark County Department of Public Works
John Wiesman, Director, Clark County Public Health
Barry Rogowski, WA State Department of Ecology
Ben Forson, WA State Department of Ecology
Nathan Reynolds, Cowlitz Indian Tribe Natural Resources Department

Ecology & Environment, Inc. GIS Department Project:
R:\3 START 3\Camp Bonneville\GIS\MAPS\MXD\phase1_sample_locations.mxd Date: 9/29/2011



CAMP BONNEVILLE PHASE I SAMPLE LOCATIONS

Vancouver, Washington

ecology and environment, inc.
Global Specialists in the Environment

N W E S

0 200 400 600 800 Feet

Sample Location Monitoring Well

Source: Microsoft Virtual Earth, 2009; Streamnet, 2010

Owner: Bonneville Conservation Restoration and Renewal Team, LLC
Contact: Michael Gage

Mailing Address: 7655 Town Square Way, Suite 214
Reno, Nevada 89523

Property Address: 23201 NE Pluss Road
Vancouver, Washington 98682

Sample Dates: 5/20/2011 and 5/21/2011
Sample Media: Ground Water
Sample Analysis: Volatile Organic Compounds,
Semivolatile Organic Compounds,
Nitroaromatics/Nitroamines,
Perchlorate
Metals

EPA Sample ID	11204302	11204336	11204338	11204339	11204340	11204342
CLP Sample ID	JDQ52	JDQ86	JDQ88	JDQ89	JDQ90	JDQ92
Station Location	BG02GW	MW01GW	MW03GW	MW04GW	MW05GW	MW07GW
Depth to Water	16.22	23.1	24.12	24.8	27.31	10.16
	Background					
Description	L4-MW01A	L4-MW05A	L4-MW03A	L4-MW02A	L4-MW04A	MW-17
Metals (µg/L)						
Aluminum	**1630**	**31.0**	30.0 U	**61.0**	**2530**	**204**
Barium	**8.8**	5.0 U	5.0 U	5.0 U	**9.9**	**9.9**
Calcium	**3210**	**2030**	**1630**	**2190**	**1370**	**32600**
Iron	**1050**	20.0 U	20.0 U	20.0 U	**1900**	**182**
Magnesium	**1710**	**964**	**755**	**482**	**778**	**3880**
Manganese	**13.1**	2.0 U	2.0 U	**12.2**	**22.4**	**20.2**
Potassium	700 U	700 U	700 U	700 U	**710**	700 U
Sodium	**2380**	**1940**	**1420**	**4890**	**1110**	**10100**
Strontium	**39.0**	**23.0**	**19.0**	**28.0**	15.0 U	15.0 U
Titanium	**69.2**	10.0 U	10.0 U	10.0 U	**177**	**11.0**
Semivolatile Organic Compounds (µg/L)						
Bis(2-ethylhexyl)phthalate	**13**	5 U	2.6 JQ	4.6 JQ	**7.7**	**78**
Nitroaromatics/Nitroamines (µg/L)						
HMX	0.75 U	0.8 U	0.82 U	**3.0**	0.81 U	0.92 U
RDX	0.75 U	**3.2**	**7.5**	**13**	**2.6**	0.92 U
Perchlorate (µg/L)						
Perchlorate	**39**	**31**	**0.35**	**190**	**38**	**0.064**

Note: Bold type indicates the sample result is above the instrument detection limit.
Depth to water is provided in feet from the top of the casing.

Key:

µg/L = micrograms per liter.
J = The analyte was positively identified. The associated numerical result is an estimate.
Q = The result is estimated because the concentration is below the Contract Required Quantitation Limit.
U = The analyte was not detected at or above the reported result.

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Contact: Michael Gage

Mailing Address 7655 Town Square Way Suite 214
Reno, Nevada 89523

Property Address 23201 NE Pluss Road
Vancouver, Washington 98682

Sample Dates: 5/20/2011 and 5/21/2011
Sample Media: Groundwater
Sample Analysis: Volatile Organic Compounds,
Semivolatile Organic Compounds,
Nitroaromatics/Nitroamines,
Metals

EPA Sample ID	11204303	11204337	11204341	11204349	11204344
CLP Sample ID	JDQ54	JDQ87	JDQ91	JDQ93	JDQ94
Station Location	BG03GW	MW02GW	MW06GW	MW08GW	MW09GW
Depth to water	12.19	26.08	30.89	38.75	11.14
Description	Background L4-MW01B	L4-MW03B	L4-MW02B	L4-MW07B	MW-18
Metals (µg/L)					
Aluminum	30 U	**95**	30 U	30 U	**7710**
Barium	5 U	5 U	5 U	5 U	**21.5**
Calcium	**2000**	**5570**	**4360**	**2470**	**16800**
Iron	20 U	**48**	**2040**	20 U	**3090**
Magnesium	**1110**	**2480**	**2190**	**1340**	**5240**
Manganese	2 U	**2**	**2970**	2 U	**36**
Potassium	700 U	**730**	700 U	700 U	**740**
Sodium	**1410**	**3570**	**2070**	**2160**	**5420**
Strontium	**27**	**53**	**31**	**31**	**76.6**
Titanium	10 U	10 U	10 U	10 U	**183**
Vanadium	10 U	10 U	10 U	10 U	**13**
Nitroaromatics/Nitroamines (µg/L)					
HMX	0.79 U	0.78 U	**6.2**	0.84 U	0.77 U
RDX	0.79 U	**4.7**	**59**	0.84 U	0.77 U
Perchlorate (µg/L)					
Perchlorate	**0.33**	**4.2**	**470**	**2.2**	**0.17**

Note: Bold type indicates the sample result is above the instrument detection limit.
Depth to water is provided in feet from the top of the casing.

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Mailing Address: 7655 Town Square Way, Suite 214
Reno, Nevada 89523

Property Address: 23201 NE Pluss Road
Vancouver, Washington 98682

Sample Dates: 5/18/2011
Sample Media: Sediment
Sample Analysis: Volatile Organic Compounds,
Semivolatile Organic Compounds,
Nitroaromatics/Nitroamines,
Perchlorate
Metals

EPA Sample ID	11204343	11204326	11204327
CLP Sample ID	JDQA3	JDQ76	JDQ77
Station Location	BG01SD	LF01SD	PP01SD
Description	Background	Landfill 4	
Volatile Organic Compounds (µg/kg)			
Acetone	**470 JK**	17 U	16 U
Perchlorate (µg/kg)			
Perchlorate	0.11 JQ	**1.5**	**0.78**
Metals (mg/kg)			
Aluminum	**53000**	**108000**	**77800**
Arsenic	4.5 U	**4.7**	**4.7**
Barium	**137**	**62.8**	**180**
Beryllium	**0.813**	**0.581**	**0.859**
Calcium	**7900**	**6140**	**7180**
Chromium	**24.1**	**34.7**	**41.0**
Cobalt	**22.8**	**47.2**	**44.4**
Copper	**88.4**	**189**	**101**
Iron	**51700**	**96700**	**71200**
Lead	**6.7**	**4.1**	**3.9**
Lithium	**12.1**	**9.99**	**15.6**
Magnesium	**4630**	**10700**	**5390**
Manganese	**1140**	**495**	**1650**
Mercury	**0.0552**	0.0098 U	**0.0164**
Nickel	**12.4**	**25.9**	**15.6**
Potassium	**886**	**783**	**1180**
Selenium	**5.0**	**7.5**	**7.0**
Sodium	**388**	**691**	**675**
Strontium	**105**	**430**	**220**
Thallium	**7.8 JL**	4.9 UJL	**6.2 JL**
Titanium	**2040**	**4060**	**2220**
Vanadium	**149**	**200**	**185**
Zinc	**84.5**	**99.8**	**85.7**

Note: Bold type indicates the sample result is above the instrument detection limit.

Key:

µg/kg = micrograms per kilogram.
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L = Low bias.
mg/kg = milligrams per kilogram.
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U = The analyte was not detected at or above the reported result.

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Owner: Bonneville Conservation Restoration and Renewal Team, LLC
Contact: Michael Gage

Mailing Address: 7655 Town Square Way, Suite 214
Reno, Nevada 89523

Property Address: 23201 NE Pluss Road
Vancouver, Washington 98682

Sample Dates: 5/18/2011 and 5/19/2011
Sample Media: Ground Water
Sample Analysis: Volatile Organic Compounds,
Semivolatile Organic Compounds,
Nitroaromatics/Nitroamines,
Perchlorate
Metals

EPA Sample ID	11204300	11204306	11204308	11204310	11204312	11204314	11204316	11204318	11204328	11204330	11204332	11204334
CLP Sample ID	JDQ50	JDQ56	JDQ58	JDQ61	JDQ62	JDQ64	JDQ66	JDQ68	JDQ78	JDQ80	JDQ82	JDQ84
Station Location	BG01GW	LF01GW	LF02GW	LF03GW	LF04GW	LF05GW	LF06GW	LF07GW	LF12GW	LF13GW	LF14GW	LF15GW
Description	Background	Landfill	Landfill	Landfill	Landfill	Landfill	Landfill	Landfill	Landfill	Landfill	Landfill	Landfill
Semivolatile Organic Compounds (µg/L)												
Bis(2-ethylhexyl)phthalate	**13**	R	**5.9**	4.9 JQ	2.1 JQ	R	2.9 JQ	2.8 JQ	**47**	**6.7**	**7.4**	2.9 JQ
Nitroaromatics/Nitroamines (µg/L)												
RDX	0.81 U	0.89 U	1 U	**1.7**	**3.7**	**5.2**	**4.9**	**3.1**	0.77 U	**1.4**	0.78 UJ	0.8 U
Perchlorate (µg/L)												
Perchlorate	**0.063 JH**	**2.4**	**2.2**	**3 JH**	**22 JH**	**36 JH**	**40 JH**	**27 JH**	0.05 U	**0.82 JH**	**0.6 JH**	**8.2 JH**
Metals (µg/L)												
Aluminum	**2980**	**7280**	**3530**	**22400**	**41400**	**6150**	**2950**	**10400**	**28000**	**39200**	**20400**	**3690**
Barium	**12.5**	**18.2**	**9.5**	**59.9**	**155**	**17.9**	**11.0**	**36.6**	**87.6**	**103**	**50.8**	5.0 U
Calcium	**1800**	**3390**	**6200**	**3600**	**3360**	**1490**	**1360**	**1860**	**9150**	**3200**	**1460**	**2440**
Chromium	10.0 U	10.0 U	10.0 U	10.0 U	**19.0**	10.0 U	10.0 U	10.0 U	**12.0**	**14.0**	10.0 U	10.0 U
Cobalt	5.0 U	5.0 U	5.0 U	**8.2**	**17.0**	5.0 U	5.0 U	5.0 U	**12.0**	**9.8**	**6.5**	5.0 U
Copper	5.0 U	**9.2**	**5.0**	**32**	**66.8**	**7.2**	5.0 U	**14.0**	**52.6**	**59.8**	**30.7**	5.0 U
Iron	**2180**	**5720**	**3290**	**15800**	**33300**	**3080**	**1920**	**7290**	**22000**	**23200**	**16800**	**2920**
Lithium	3.0 U	3.0 U	3.0 U	**4.6**	**7.9**	3.0 U	3.0 U	3.0 U	**6.0**	**8.3**	**4.3**	3.0 U
Magnesium	**870**	**1480**	**2150**	**2250**	**3280**	**828**	**792**	**1330**	**4510**	**2860**	**1600**	**1200**
Manganese	**48.4**	**178**	**83.6**	**297**	**425**	**29.5**	**22.4**	**68.4**	**581**	**272**	**194**	**143**
Mercury	0.05 U	0.05 U	0.05 U	0.05 U	**0.0551**	0.05 U	0.05 U	0.05 U	**0.0536**	**0.0684**	0.05 U	0.05 U
Nickel	10.0 U	10.0 U	10.0 U	10.0 U	**12.0**	10.0 U	10.0 U	10.0 U	**19.0**	**12.0**	10.0 U	10.0 U
Potassium	700 U	700 U	700 U	700 U	**880**	700 U	700 U	700 U	700 U	**830**	700 U	700 U
Sodium	**1410**	**1900**	**2710**	**1910**	**2910**	**1980**	**2080**	**2130**	**3260**	**1900**	**1530**	**2150**
Strontium	**22.0**	**28.0**	**24.0**	**48.0**	**65.0**	**24.0**	**19.0**	**34.0**	**72.0**	**51.0**	**23.0**	**34**
Titanium	**204**	**502**	**219**	**1540**	**2870**	**321**	**180**	**554**	**1810**	**2410**	**1390**	**156**
Vanadium	10.0 U	**25.0**	**13.0**	**52.3**	**185**	**11.0**	**10.0**	**21.0**	**90.3**	**106**	**67.3**	10.0 U
Zinc	**5.3**	**12.0**	**5.9**	**27.4**	**60.4**	**9.0**	5.0 U	**13.0**	**48.9**	**55.7**	**25.0**	5.0 U

Note: Bold type indicates the sample result is above the instrument detection limit.

Key:

µg/L = micrograms per liter.
H = High bias.
J = The analyte was positively identified. The associated numerical result is an estimate.
Q = The result is estimated because the concentration is below the Contract Required Quantitation Limit.
R = Rejected. The data are unusable for all purposes.
U = The analyte was not detected at or above the reported result.

Owner: Bonneville Conservation Restoration and Renewal Team, LLC
Contact: Michael Gage

Mailing Address: 7655 Town Square Way, Suite 214
Reno, Nevada 89523

Property Address: 23201 NE Pluss Road
Vancouver, Washington 98682

Sample Dates: 5/16/2011 and 5/17/2011
Sample Media: Subsurface soil samples
Sample Analysis: Volatile Organic Compounds,
Semivolatile Organic Compounds,
Nitroaromatics/Nitroamines,
Perchlorate
Metals

EPA Sample ID	11204301	11204307	11204309	11204311	11204313	11204315	11204317	11204319	11204322	11204323	11204329	11204331	11204333
CLP Sample ID	JDQ51	JDQ57	JDQ59	JDQ61	JDQ63	JDQ65	JDQ67	JDQ69	JDQ72	JDQ73	JDQ79	JDQ81	JDQ83
Station Location	BG01SB	LF01SB	LF02SB	LF03SB	LF04SB	LF05SB	LF06SB	LF07SB	LF08SB	LF09SB	LF12SB	LF13SB	LF14SB
Sample Depth (feet bgs)		1.6	2.0	1.8	1.6	2.3	1.8	1.4	0.7	0.3	2.1	1.6	2.3
Description	Background	Landfill											
Volatile Organic Compounds (µg/kg)													
Acetone	21 U	22 U	28 U	15 U	22 U	16 U	17 U	19 U	22 U	19 U	20 UJK	**450 JK**	**140 JK**
Perchlorate(µg/kg)													
Perchlorate	0.82 U	0.47 JQ	0.85 U	0.73 U	**7.1**	**7.0**	**1.6**	0.77 U	0.12 JQ	0.77 JQ	0.85 U	0.93 JQ	0.11 JQ
Nitroaromatics/Nitroamines (µg/kg)													
RDX	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	**250**	80 U	80 U	80 U	80 U
Metals (mg/kg)													
Aluminum	**82300**	**69500**	**80600**	**75900**	**71800**	**69000**	**55000**	**57800**	**81200**	**74200**	**59100**	**66800**	**85400**
Arsenic	**4.8**	4.5 U	**4.8**	**6.2**	**5.0**	**5.0**	4.5 U	**6.5**	**5.7**	4.4 U	4.5 U	4.4 U	**5.9**
Barium	**154**	**162**	**171**	**174**	**231**	**191**	**132**	**174**	**139**	**169**	**139**	**174**	**160**
Beryllium	**1.21**	**1.15**	**1.19**	**1.08**	**1.17**	**1.44**	**0.931**	**0.837**	**1.27**	**1.03**	**0.882**	**1.15**	**0.842**
Calcium	**1940**	**3660**	**5380**	**6130**	**2950**	**3350**	**2990**	**2910**	**2020**	**2590**	**4740**	**4960**	**839**
Chromium	**38.0**	**28.4**	**33.3**	**42.6**	**37.7**	**32.9**	**34.8**	**33.9**	**46.9**	**48.1**	**23.4**	**27.7**	**37.7**
Cobalt	**28.4**	**20.8**	**30.2**	**29.4**	**23.7**	**33.1**	**15.9**	**15.8**	**36.7**	**33.0**	**15.3**	**23.3**	**34.5**
Copper	**123**	**106**	**121**	**110**	**115**	**116**	**75.7**	**84**	**149**	**105**	**86.7**	**104**	**121**
Iron	**76900**	**55100**	**68400**	**76900**	**65900**	**68000**	**58000**	**62800**	**82600**	**66500**	**42200**	**54200**	**74500**
Lead	**7.8**	**5.0**	**8.7**	**3.7**	**5.1**	**7.0**	**3.4**	**6.3**	**24.2**	**25.5**	**3.1**	**7.3**	**11.0**
Lithium	**18.8**	**14.7**	**16.1**	**15.8**	**15.4**	**14.8**	**11.1**	**12.6**	**15.7**	**13.7**	**13.7**	**14.7**	**17.3**
Magnesium	**4660**	**4980**	**5620**	**5850**	**5070**	**4880**	**3640**	**3760**	**4410**	**4370**	**4320**	**4650**	**2650**
Manganese	**645**	**516**	**1260**	**1080**	**552**	**1470**	**398**	**412**	**1580**	**1030**	**305**	**839**	**1460**
Mercury	**0.0731**	**0.0334**	**0.054**	**0.0186**	**0.0303**	**0.0688**	**0.018**	**0.0358**	**0.105**	**0.0691**	**0.0296**	**0.0625**	**0.0553**
Nickel	**17.4**	**14.8**	**17.0**	**15.7**	**16.2**	**16.5**	**11.9**	**12.7**	**19.0**	**14.8**	**13.2**	**15.2**	**21.9**
Potassium	**742**	**781**	**897**	**970**	**832**	**818**	**726**	**840**	**638**	**1000**	**761**	**777**	**636**
Selenium	**5.0**	5.0 U	**6.4**	**6.0**	**5.1**	**5.5**	5.0 U	4.9 U	**6.8**	**5.9**	**9.5**	**5.5**	**6.0**
Sodium	**259**	**461**	**462**	**639**	**434**	**293**	**319**	**381**	**170**	**238**	**452**	**376**	**140 JH**
Strontium	**70.6**	**97.2**	**99.1**	**131**	**77.0**	**91.3**	**64.9**	**74.9**	**65.2**	**83.4**	**88.4**	**110**	**26.0**
Thallium	**6.5 JL**	**5.2 JL**	**6.8 JL**	5.0 UJL	**6.1 JL**	**8.4 JL**	**6.9 JL**	**6.8 JL**	**7.8 JL**	**8.6 JL**	**6.9 JL**	**9.0 JL**	**6.1 JL**
Titanium	**2950**	**2360**	**2620**	**2470**	**2520**	**2560**	**1930**	**1900**	**3250**	**2410**	**1980**	**2160**	**2370**
Vanadium	**212**	**186**	**200**	**204**	**215**	**217**	**158**	**193**	**250**	**192**	**165**	**169**	**221**
Zinc	**82.0**	**88.8**	**101**	**85.4**	**95.2**	**107**	**69.5**	**71.8**	**88.7**	**82.9**	**70.3**	**85.3**	**96.5**

Note: Bold type indicates the sample result is above the instrument detection limit.

Key:

µg/kg = micrograms per kilogram.
bgs = below ground surface.
H = High bias.
J = The analyte was positively identified. The associated numerical result is an estimate.
K = Unknown Bias.
L = Low bias.
mg/kg = milligrams per kilogram.
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U = The analyte was not detected at or above the reported result.