

EXHIBIT C



ON-SITE TECHNICAL SERVICES, INC

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August 28, 2012

Mr. Mark Domagala
NYSDEC – Region 8
Division of Solid and Hazardous Materials
6274 East Avon-Lima Road
Avon, New York 14414

Re: Hakes C & D Landfill Painted Post, New York – 2nd Quarter Radiological Test Results

Dear Mark:

On behalf of Hakes C & D Landfill, the purpose of this letter is to present results of the second quarter 2012 leachate radiological testing. Samples were collected on May 23 and 24, 2012 and sent to ALS Environmental (formerly Columbia Analytical Services) in Rochester, New York. The table below is a description of each sample location and results are shown in Table 1. Field sampling forms and the laboratory analytical report are attached.

Sample ID	Date Sampled	Location
C1ALeach-0512	24-May-12	Cell 1A Leachate
C1Leach-0512	23-May-12	Cell 1 Leachate
C2Leach-0512	23-May-12	Cell 2 Leachate
C3Leach-0512	23-May-12	Cell 3 Leachate
C4Leach-0512	23-May-12	Cell 4 Leachate
C5Leach-0512	23-May-12	Cell 5 Leachate
C6Leach-0512	23-May-12	Cell 6 Leachate
Leachate-0512	23-May-12	Combined Leachate Collection System

Please feel free to call myself at 585-593-1824 or Joe Boyles at 585-466-7271 if you have any questions.

Sincerely,

Jonathan E. Brandes, P.G.

Senior Geologist

cc: Joe Boyles, Casella Waste Systems Inc.

Carla Jordan, Casella Waste Systems Inc.

Mark Amann, NYSDEC

Enclosures

Table 1

Second Quarter 2012 Leachate Radiological Analytical Results
Hakes C and D Landfill
Painted Post, New York
(pCi/L except where noted)

Parameter	Combined LCS 5/23/2012	Cell 1 Leachate 5/23/2012	Cell 1A Leachate 5/24/2012	Cell 2 Leachate 5/23/2012
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Field Parameters

Field pH (std. units)	7.55	6.94	6.85	6.89
ORP (mV)	112.6	-26.1	85.2	135.4
Specific Conductivity (us/cm)	2881	4889	7781	4771
Temperature (deg. C)	19.54	19.74	23.61	21.62
Turbidity (NTU)	14.8	>1000	9.06	49.1

Radionuclide Compounds

Actinium-228	-1.140 ± 12.4 (18.0)	-6.120 ± 276 (16.4)	-2.640 ± 16.6 (20.0)	-7.120 ± 526 (12.9)
Actinium-228, Dissolved	1.61 ± 6.98 (17.5)	5.15 ± 7.66 (15.0)	-0.056 ± 10.7 (20.6)	-6.610 ± 18.2 (31.1)
Bismuth-212	16.4 ± 39.0 (68.3)	20.5 ± 41.5 (71.6)	-4.580 ± 183 (43.5)	24.6 ± 28.8 (47.9)
Bismuth-212, Dissolved	-3.330 ± 231 (76.2)	-5.440 ± 2,510 (51.5)	17.0 ± 36.4 (63.4)	-8.130 ± 60.6 (105)
Bismuth-214	-2.330 ± 3.67 (51.6)	6.21 ± 4.50 (38.6)	7.15 ± 19.6 (34.7)	0.471 ± 0.761 (29.4)
Bismuth-214, Dissolved	5.56 ± 4.94 (37.6)	6.57 ± 3.71 (38.3)	0.992 ± 16.5 (34.2)	426 ± 33.1 (54.3)
Cesium-134	-0.751 ± 3.37 (5.54)	2.14 ± 2.23 (5.83)	-0.641 ± 3.38 (5.65)	1.41 ± 2.44 (3.54)
Cesium-134, Dissolved	-1.270 ± 3.32 (5.50)	0.148 ± 4.00 (6.80)	-0.775 ± 2.88 (4.99)	1.57 ± 4.76 (7.36)
Cesium-137	1.07 ± 2.45 (4.25)	-0.955 ± 2.89 (5.02)	0.289 ± 2.65 (4.75)	1.62 ± 2.06 (3.38)
Cesium-137, Dissolved	-0.002 ± 2.76 (4.99)	2.49 ± 2.21 (3.50)	0.0580 ± 2.74 (4.95)	1.45 ± 5.36 (6.20)
Lead-212	-1.360 ± 8.94 (9.32)	9.01 ± 13.1 (10.5)	8.76 ± 11.2 (9.99)	24.8 ± 14.9 (7.26)
Lead-212, Dissolved	5.46 ± 7.63 (9.53)	4.04 ± 6.37 (7.92)	0.520 ± 5.33 (9.70)	-1.310 ± 7.89 (13.1)
Lead-214	-2.020 ± 11.0 (12.6)	17.4 ± 7.14 (9.61)	7.30 ± 9.32 (12.4)	25.5 ± 20.5 (6.57)
Lead-214, Dissolved	1.35 ± 2.66 (12.5)	12.7 ± 7.35 (6.96)	-2.500 ± 11.3 (12.1)	410 ± 39.2 (15.3)
Potassium-40	-15.600 ± 76.2 (80.1)	138 ± 42.1 (52.0)	17.9 ± 36.2 (69.3)	75.2 ± 35.2 (57.1)
Potassium-40, Dissolved	9.24 ± 35.6 (70.9)	125 ± 41.0 (46.0)	129 ± 44.3 (51.3)	35.6 ± 62.3 (116)
Radium-226	16.7 ± 55.7 (97.4)	24.0 ± 69.5 (119)	52.2 ± 56.1 (79.0)	7.10 ± 56.1 (99.6)
Radium-226 (EPA 903.1)	0.509 ± 0.406 (0.468)	1.05 ± 0.595 (0.630)	1.61 ± 0.665 (0.395)	1.12 ± 0.551 (0.474)
Radium-226, Dissolved	39.5 ± 71.9 (121)	-13.000 ± 656 (104)	19.4 ± 63.0 (109)	-65.400 ± 113 (191)
Radium-226, Dissolved (EPA 903.1)	0.716 ± 0.486 (0.554)	1.05 ± 0.586 (0.571)	0.608 ± 0.406 (0.407)	1.63 ± 0.738 (0.712)
Radium-228	-1.140 ± 12.4 (16.0)	-6.120 ± 276 (18.4)	-2.640 ± 16.8 (20.0)	-7.120 ± 526 (12.9)
Radium-228 (EPA 904.0)	1.19 ± 0.536 (0.889)	1.32 ± 0.565 (0.901)	1.16 ± 0.565 (0.964)	2.46 ± 0.759 (0.925)
Radium-228, Dissolved	1.61 ± 6.98 (17.5)	5.15 ± 7.66 (15.0)	-0.056 ± 10.7 (20.8)	-6.610 ± 16.2 (31.1)
Radium-228, Dissolved (EPA 904.0)	1.11 ± 0.516 (0.826)	1.12 ± 0.502 (0.816)	0.947 ± 0.542 (0.973)	1.94 ± 0.636 (0.656)
Thallium-208	-0.961 ± 5.35 (5.53)	-0.886 ± 5.39 (5.67)	-0.167 ± 3.43 (5.93)	1.08 ± 1.06 (4.40)
Thallium-208, Dissolved	-2.450 ± 45.2 (5.70)	1.89 ± 2.04 (4.85)	0.332 ± 0.526 (5.40)	-1.810 ± 5.10 (8.44)
Thorium-232	-1.140 ± 12.4 (18.0)	-6.120 ± 276 (16.4)	-2.640 ± 16.8 (20.0)	-7.120 ± 526 (12.9)
Thorium-232, Dissolved	1.61 ± 6.98 (17.5)	5.15 ± 7.66 (15.0)	-0.056 ± 10.7 (20.8)	-6.610 ± 18.2 (31.1)
Thorium-234	-5.310 ± 562 (973)	-12.600 ± 541 (936)	-345.000 ± 699 (1,170)	-162.000 ± 518 (869)
Thorium-234, Dissolved	23.6 ± 596 (1,030)	-9.590 ± 404 (691)	-303.000 ± 607 (1,020)	102 ± 122 (211)
Total Uranium	-0.960 ± 1.04 (3.10)	-1.15 ± 0.952 (3.01)	0.424 ± 1.27 (2.69)	-1.24 ± 0.917 (3.00)
Total Uranium, Dissolved	-0.376 ± 0.713 (1.87)	0.848 ± 1.37 (2.89)	0.261 ± 0.667 (1.48)	-0.299 ± 0.530 (1.48)
Uranium-235	-9.300 ± 24.7 (41.6)	0.592 ± 0.780 (42.5)	9.42 ± 17.5 (40.6)	-2.120 ± 19.6 (33.4)
Uranium-235, Dissolved	11.4 ± 18.1 (26.1)	30.8 ± 21.7 (27.7)	0.101 ± 19.0 (33.5)	5.34 ± 32.1 (48.9)
Uranium-238	-24.700 ± 105 (127)	66.4 ± 60.9 (63.3)	-11.600 ± 465 (147)	-4.880 ± 195 (116)
Uranium-238, Dissolved	34.1 ± 67.1 (114)	29.6 ± 66.2 (112)	22.6 ± 74.5 (130)	34.7 ± 825 (1,430)

Table 1

Second Quarter 2012 Leachate Radiological Analytical Results
Hakes C and D Landfill
Painted Post, New York
(pCi/L except where noted)

Parameter	Cell 3 Leachate 5/23/2012	Cell 4 Leachate 5/23/2012	Cell 5 Leachate 5/23/2012	Cell 6 Leachate 5/23/2012
Field Parameters				
Field pH (std. units)	6.84	6.42	6.48	7.02
ORP (mV)	60.4	7.9	20.1	146.7
Specific Conductivity (us/cm)	7253	1956	3316	7202
Temperature (deg. C)	21.5	19.36	20.9	22.06
Turbidity (NTU)	50.2	20.1	17.8	32.6
Radionuclide Compounds				
Actinium-228	-1.580 ± 15.5 (19.2)	4.03 ± 4.90 (17.3)	-2.900 ± 21.8 (17.4)	5.36 ± 42.7 (48.8)
Actinium-228, Dissolved	12.5 ± 6.37 (12.0)	-0.042 ± 0.0720 (16.1)	-7.120 ± 904 (15.8)	-30.200 ± 39.3 (53.6)
Bismuth-212	-5.250 ± 1,320 (71.8)	0.646 ± 31.7 (57.4)	2.36 ± 24.7 (45.6)	1.46 ± 101 (176)
Bismuth-212, Dissolved	-19.700 ± 175 (65.1)	1.83 ± 35.4 (64.3)	-13.700 ± 1,880 (63.5)	105 ± 115 (200)
Bismuth-214	1.88 ± 2.10 (51.4)	43.1 ± 9.54 (36.2)	6.83 ± 4.49 (34.4)	43.2 ± 38.4 (95.4)
Bismuth-214, Dissolved	3.30 ± 3.70 (33.2)	8.50 ± 5.78 (31.3)	7.46 ± 7.57 (31.0)	1,870 ± 108 (103)
Cesium-134	0.428 ± 0.700 (5.39)	-2.850 ± 3.70 (6.00)	0.444 ± 0.507 (4.60)	-3.310 ± 7.74 (12.6)
Cesium-134, Dissolved	-1.970 ± 3.23 (4.98)	-0.555 ± 3.52 (4.61)	-0.057 ± 16.7 (4.26)	6.82 ± 8.92 (13.3)
Cesium-137	-0.198 ± 2.70 (4.85)	1.91 ± 1.72 (2.65)	-0.560 ± 2.48 (4.30)	-6.710 ± 7.62 (12.8)
Cesium-137, Dissolved	0.0350 ± 2.24 (4.02)	0.224 ± 2.50 (4.43)	-0.232 ± 32.5 (4.00)	-2.220 ± 9.76 (13.9)
Lead-212	-4.200 ± 181 (12.9)	11.0 ± 13.2 (10.5)	7.11 ± 10.2 (9.47)	6.36 ± 18.3 (22.5)
Lead-212, Dissolved	36.1 ± 21.4 (7.33)	0.147 ± 5.23 (9.35)	8.65 ± 15.6 (7.97)	-1.910 ± 16.9 (24.7)
Lead-214	11.1 ± 7.56 (11.1)	38.0 ± 10.6 (9.95)	16.1 ± 11.7 (9.92)	24.9 ± 15.2 (27.4)
Lead-214, Dissolved	42.4 ± 24.0 (10.3)	10.4 ± 6.01 (7.86)	13.1 ± 19.0 (10.2)	1,910 ± 144 (28.9)
Potassium-40	101 ± 45.5 (69.5)	-22.200 ± 77.2 (63.8)	19.3 ± 30.5 (58.8)	-35.900 ± 139 (213)
Potassium-40, Dissolved	179 ± 52.8 (47.0)	1.45 ± 29.8 (57.8)	42.0 ± 32.5 (55.2)	61.0 ± 135 (195)
Radium-226	6.37 ± 70.3 (123)	-1.850 ± 98.6 (118)	5.94 ± 58.1 (101)	-55.100 ± 214 (281)
Radium-226 (EPA 903.1)	1.23 ± 0.551 (0.145)	0.574 ± 0.404 (0.422)	0.888 ± 0.494 (0.172)	1.97 ± 0.767 (0.162)
Radium-226, Dissolved	44.5 ± 62.1 (104)	-11.700 ± 642 (93.9)	34.6 ± 57.6 (97.3)	-93.300 ± 247 (350)
Radium-226, Dissolved (EPA 903.1)	0.731 ± 0.545 (0.737)	0.348 ± 0.365 (0.539)	0.427 ± 0.326 (0.165)	1.19 ± 0.582 (0.501)
Radium-228	-1.580 ± 15.5 (19.2)	4.03 ± 4.90 (17.3)	-2.900 ± 21.8 (17.4)	5.36 ± 42.7 (48.8)
Radium-228 (EPA 904.0)	1.20 ± 0.547 (0.906)	1.10 ± 0.563 (0.976)	0.549 ± 0.451 (0.894)	1.56 ± 0.604 (0.925)
Radium-228, Dissolved	12.5 ± 6.37 (12.0)	-0.042 ± 0.0720 (16.1)	-7.120 ± 904 (15.8)	-30.200 ± 39.3 (53.6)
Radium-228, Dissolved (EPA 904.0)	1.27 ± 0.536 (0.820)	0.694 ± 0.475 (0.896)	1.26 ± 0.580 (0.965)	0.810 ± 0.515 (0.958)
Thallium-208	-1.450 ± 8.41 (5.68)	-0.364 ± 3.23 (4.94)	-0.301 ± 3.36 (5.23)	-0.295 ± 12.2 (14.5)
Thallium-208, Dissolved	2.89 ± 3.31 (4.31)	1.39 ± 2.46 (4.28)	2.12 ± 2.48 (4.58)	-6.460 ± 11.5 (15.1)
Thorium-232	-1.580 ± 15.5 (19.2)	4.03 ± 4.90 (17.3)	-2.900 ± 21.8 (17.4)	5.36 ± 42.7 (48.8)
Thorium-232, Dissolved	12.5 ± 6.37 (12.0)	-0.042 ± 0.0720 (16.1)	-7.120 ± 904 (15.8)	-30.200 ± 39.3 (53.6)
Thorium-234	-219.000 ± 620 (1,050)	260 ± 583 (973)	253 ± 503 (840)	399 ± 471 (759)
Thorium-234, Dissolved	-131.000 ± 636 (1,070)	-175.000 ± 551 (928)	-7.250 ± 453 (777)	196 ± 234 (380)
Total Uranium	-1.91 ± 1.35 (3.96)	0.772 ± 0.745 (1.40)	-0.524 ± 0.415 (1.38)	0.0510 ± 0.793 (1.86)
Total Uranium, Dissolved	0.982 ± 0.792 (1.40)	0.350 ± 0.641 (1.38)	1.09 ± 0.975 (1.86)	-0.233 ± 0.739 (1.87)
Uranium-235	-2.530 ± 24.1 (41.8)	-1.220 ± 22.6 (38.7)	-4.340 ± 22.5 (38.2)	27.2 ± 47.2 (73.7)
Uranium-235, Dissolved	0.112 ± 21.4 (36.8)	-12.900 ± 21.9 (36.5)	0.360 ± 20.5 (35.4)	1.77 ± 53.9 (87.0)
Uranium-238	58.9 ± 78.0 (129)	-3.260 ± 409 (128)	26.7 ± 31.5 (115)	289 ± 1,210 (2,070)
Uranium-238, Dissolved	-1.830 ± 105 (119)	15.3 ± 64.6 (112)	3.17 ± 71.6 (125)	-1,060.000 ± 1,730 (2,3

Groundwater Suppression and Leachate Sampling Field Form On-Site Technical Services, Inc.

Project: Hakes C&D Landfill, Painted Post, New York

Date: 5-23-12

Sampling Location: Leachate Sample ID: Leachate 0512 Arrival Time: 0918

Weather Conditions:

Temp. 64°F () Sunny () Partly Cloudy (X) Cloudy () Light Rain () Hvy. Rain () Snow

Wind Conditions: 0-5 mph

Location Type

() Groundwater Suppression (X) Leachate () Secondary Leachate () Surface Water/Sediment () Res. Water
() Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: NA

Comments: _____

Field Parameters (as appropriate)

Meter: YSI 556 (sn: 0512374) w/ Hach 2100P (sn: 12410)

Field Parameters tested in: () Submerged Probe () Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
<u>1000</u>	<u>7.55</u>	<u>2881</u>	<u>14.8</u>	<u>NA</u>	<u>19.54</u>	<u>112.6</u>

Sample Information

Sample Type: (X) Grab () Composite Sample Location: () Discharge Pipe () Pond () Ditch Tank
Location Description/Condition: _____ Northern most

Sample Collection Equipment/Method: Bucket - 5 GAL Sample Time: 1000

Sample Description (clarity/color): Yellowish Brown tint Sample Odor (Y) or (N) Explain: No odor

Other Observations/Comments: _____

Analysis Requested: Expanded Set + Gamma spec - Radium Number of Containers: 23 + 8

Sampling Completion: Time 1115 Date 5-23-12 Samplers K Ogilvie

Groundwater Suppression and Leachate Sampling Field Form On-Site Technical Services, Inc.

Project: Hakes C&D Landfill, Painted Post, New York

Date: 5-23-12

Sampling Location: C1Leach Sample ID: C1Leach-0512 Arrival Time: 1125

Weather Conditions:

Temp. 69°F () Sunny () Partly Cloudy Cloudy () Light Rain () Hvy. Rain () Snow

Wind Conditions: 0.5 mph

Location Type

() Groundwater Suppression Leachate () Secondary Leachate () Surface Water/Sediment () Res. Water
() Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: 10 GPM

Comments: _____

Field Parameters (as appropriate)

Meter: YSI 556 (sn: 05D2374AW), Hach 2100P (sn: 12410)

Field Parameters tested in: () Submerged Probe Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
<u>1140</u>	<u>6.94</u>	<u>4889</u>	<u>>1000</u>	<u>NA</u>	<u>19.74</u>	<u>-26.1</u>

Sample Information

Sample Type: Grab () Composite Sample Location: () Discharge Pipe () Pond () Ditch

Location Description/Condition: River Pipe

Sample Collection Equipment/Method: 5 gal Bucket Sample Time: 1140

Sample Description (clarity/color): Cloudy Gray Sample Odor (Y) or (N) Explain: _____

Other Observations/Comments: _____

Analysis Requested: Gamma Spec - Radium Number of Containers: 8

Sampling Completion: Time 1158 Date 5-23-12 Samplers K Dye

Groundwater Suppression and Leachate Sampling Field Form On-Site Technical Services, Inc.

Project: Hakes C&D Landfill, Painted Post, New York

Date: 5-24-12

Sampling Location: C1A Leach Sample ID: C1A Leach-0512 Arrival Time: 1217

Weather Conditions:

Temp. 74°F () Sunny (X) Partly Cloudy () Cloudy () Light Rain () Hvy. Rain () Snow

Wind Conditions: 0-10 mph

Location Type

() Groundwater Suppression (X) Leachate () Secondary Leachate () Surface Water/Sediment () Res. Water
() Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: _____

Comments: _____

Field Parameters (as appropriate)

Meter: YSI 556 (sn: 05D2374AW), Hach 2100P (sn: 12410)

Field Parameters tested in: () Submerged Probe (X) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
<u>1230</u>	<u>6.85</u>	<u>7781</u>	<u>90.6</u>	<u>NA</u>	<u>23.61</u>	<u>852</u>

Sample Information

Sample Type: (X) Grab () Composite Sample Location: () Discharge Pipe () Pond () Ditch

Location Description/Condition: Adjacent to MW-C

Sample Collection Equipment/Method: 5 gal Bucket Sample Time: 1230

Sample Description (clarity/color): Clear Blackish Sample Odor (Y) or (N) Explain: leachate odor
Tint

Other Observations/Comments: _____

Analysis Requested: Gamma spec - Radium Number of Containers: 8

Sampling Completion: Time 1251 Date 5-24-12 Samplers 1K Dye

Groundwater Suppression and Leachate Sampling Field Form On-Site Technical Services, Inc.

Project: Hakes C&D Landfill, Painted Post, New York

Date: 5-23-12

Sampling Location: C2Leach Sample ID: C2Leach-0512 Arrival Time: 1457

Weather Conditions:

Temp. 76 °F () Sunny () Partly Cloudy (X) Cloudy () Light Rain () Hvy. Rain () Snow

Wind Conditions: 0-5 mph

Location Type

() Groundwater Suppression (X) Leachate () Secondary Leachate () Surface Water/Sediment () Res. Water
() Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: Approx 56 PM

Comments: _____

Field Parameters (as appropriate)

Meter: YSI 556 (sn: 05D2374AW), Hach 2100P (sn: 12410)

Field Parameters tested in: () Submerged Probe (X) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
<u>1510</u>	<u>6.89</u>	<u>4771</u>	<u>49.1</u>	<u>NA</u>	<u>21.62</u>	<u>135.4</u>

Sample Information

Sample Type: (X) Grab () Composite Sample Location: () Discharge Pipe () Pond () Ditch Riser ^①

Location Description/Condition: Riser Pipe Adjacent to MW-E

Sample Collection Equipment/Method: 5 gal Bucket Sample Time: 1510

Sample Description (clarity/color): Clear w/NAK Hue Sample Odor (Y) or (N) Explain: leachate color

Other Observations/Comments: _____

Analysis Requested: Gamma Spec - Radium Number of Containers: 8

Sampling Completion: Time 1527 Date 5-23-12 Samplers K D/E

Groundwater Suppression and Leachate Sampling Field Form On-Site Technical Services, Inc.

Project: Hakes C&D Landfill, Painted Post, New York

Date: 5-23-12

Sampling Location: C3Leach Sample ID: C3Leach-0512 Arrival Time: 1418

Weather Conditions:

Temp. 76° F () Sunny () Partly Cloudy () Cloudy () Light Rain () Hvy. Rain () Snow

Wind Conditions: 0-5 mph

Location Type

() Groundwater Suppression () Leachate () Secondary Leachate () Surface Water/Sediment () Res. Water
() Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: Approx 5 GPM

Comments: _____

Field Parameters (as appropriate)

Meter: YSI 556 (sn: 05D2374A), Hach 2100P (sn: 12410)

Field Parameters tested in: () Submerged Probe () Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
<u>1430</u>	<u>6.84</u>	<u>7253</u>	<u>50.2</u>	<u>NA</u>	<u>21.50</u>	<u>60.4</u>

Sample Information

Sample Type: () Grab () Composite Sample Location: () Discharge Pipe () Pond () Ditch () Riser ^①

Location Description/Condition: Riser pipe adjacent to MW-F

Sample Collection Equipment/Method: 5 GAL Bucket Sample Time: 1430

Sample Description (clarity/color): Clear w/Black tint Sample Odor () or () Explain: leachate odor

Other Observations/Comments: _____

Analysis Requested: Gamma Spec - Radium Number of Containers: 8

Sampling Completion: Time 1448 Date 5-23-12 Samplers R Dye

Groundwater Suppression and Leachate Sampling Field Form

On-Site Technical Services, Inc.

Project: Hakes C&D Landfill, Painted Post, New York

Date: 5-23-12

Sampling Location: C4Leach Sample ID: C4Leach-0512 Arrival Time: 1349

Weather Conditions:

Temp. 74 ° F () Sunny () Partly Cloudy (x) Cloudy () Light Rain () Hvy. Rain () Snow

Wind Conditions: 0.5 mph

Location Type

() Groundwater Suppression (x) Leachate () Secondary Leachate () Surface Water/Sediment () Res. Water
() Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: Approx. 56 PM

Comments: _____

Field Parameters (as appropriate)

Meter: YSI 556 (sn: 0512374AW), Hach 2100P (sn: 12410)

Field Parameters tested in: () Submerged Probe (x) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
<u>1405</u>	<u>6.42</u>	<u>1956</u>	<u>20.1</u>	<u>NA</u>	<u>19.36</u>	<u>7.9</u>

Sample Information

Sample Type: (x) Grab () Composite Sample Location: () Discharge Pipe () Pond () Ditch Riser ^①

Location Description/Condition: Riser pipe adjacent to MWGR

Sample Collection Equipment/Method: 5 gal Bucket Sample Time: 1405

Sample Description (clarity/color): clear Slight yellow tint Sample Odor (Y) or (N) Explain: leachate odor

Other Observations/Comments: _____

Analysis Requested: Gamma Spec - Radium Number of Containers: 8

Sampling Completion: Time 1416 Date 5-27-12 Samplers K DJE

Groundwater Suppression and Leachate Sampling Field Form On-Site Technical Services, Inc.

Project: Hakes C&D Landfill, Painted Post, New York

Date: 5-23-12

Sampling Location: C5 Leach Sample ID: C5 Leach - 0512 Arrival Time: 12:18

Weather Conditions:

Temp. 70° F () Sunny () Partly Cloudy Cloudy () Light Rain () Hvy. Rain () Snow

Wind Conditions: 0-5 mph

Location Type

() Groundwater Suppression Leachate () Secondary Leachate () Surface Water/Sediment () Res. Water
() Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: 12 GPM

Comments: _____

Field Parameters (as appropriate)

Meter: YSI 556 (sn: 05D23744) Hach 2100P (sn: 12410)

Field Parameters tested in: () Submerged Probe Cup
Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
<u>1220</u>	<u>6.48</u>	<u>3316</u>	<u>17.8</u>	<u>NA</u>	<u>20.90</u>	<u>201</u>

Sample Information

Sample Type: Grab () Composite Sample Location: () Discharge Pipe () Pond () Ditch ^① Riser

Location Description/Condition: Riser adjacent to MW-11

Sample Collection Equipment/Method: _____ Sample Time: 1220

Sample Description (clarity/color): light yellow tint Sample Odor: (Y) or (N) Explain: leachate odor

Other Observations/Comments: _____

Analysis Requested: Gamma Spec - Radium Number of Containers: 8

Sampling Completion: Time 1250 Date 5-23-12 Samplers K. Dye

Groundwater Suppression and Leachate Sampling Field Form On-Site Technical Services, Inc.

Project: Hakes C&D Landfill, Painted Post, New York

Date: 5-23-12

Sampling Location: C6Leach Sample ID: C6Leach-0512 Arrival Time: 1314

Weather Conditions:

Temp. 72° F () Sunny () Partly Cloudy (x) Cloudy () Light Rain () Hvy. Rain () Snow

Wind Conditions: 0-5 mph

Location Type

() Groundwater Suppression (x) Leachate () Secondary Leachate () Surface Water/Sediment () Res. Water
() Other _____

Flow and Depth Information (as appropriate)

Depth: NA Estimated Flow: <1 GPM

Comments: _____

Field Parameters (as appropriate)

Meter: YSI 556 (sn: 0502374A), Hach 2100P (sn: 12410)

Field Parameters tested in: () Submerged Probe (x) Cup

Note: Turbidity measured from a vial grab sample

Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)
<u>1330</u>	<u>7.02</u>	<u>7202</u>	<u>32.6</u>	<u>NA</u>	<u>22.06</u>	<u>146.7</u>

Sample Information

Sample Type: (x) Grab () Composite Sample Location: () Discharge Pipe () Pond () Ditch Riser

Location Description/Condition: Riser Pipe

Sample Collection Equipment/Method: 5 GAL Bucket Sample Time: 1330

Sample Description (clarity/color): Yellowish tint Sample Odor (Y) or (N) Explain: leachate odor

Other Observations/Comments: minimal water Amount Partial Sample
3 of each instead of 4

Analysis Requested: Gamma Spec - Radium Number of Containers: 6

Sampling Completion: Time 1344 Date 5-23-12 Samplers K Dye



June 21, 2012

Mr. Joe Boyles
Casella Waste Systems
Hyland Facility
6653 Herdman Road
Angelica, NY 14709

Re: Hakes C&D Disposal - Leachate
Service Request # R1203316

Dear Mr. Boyles:

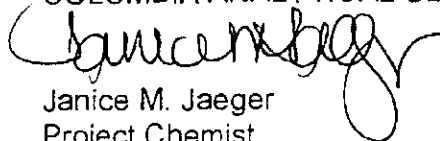
Enclosed is the analytical data report for the above referenced facility. A total of sixteen samples were subcontracted to Pace Analytical for Radiological Testing.

This report consists of one (1) package: the sample data summary package. The summary package has been e-mailed to your attention and to On-Site. A hard copy of the summary package has also been mailed to On-Site. All data presented in this package has been reviewed prior to report submission. If you should have any questions or concerns, please contact me at (585) 288-5380.

Thank you for your continued use of our services.

Sincerely,

COLUMBIA ANALYTICAL SERVICES



Janice M. Jaeger
Project Chemist

enc.

cc: Mr. Jon Brandes
Ms. Michelle Denhoff
On-Site
72 Railroad Avenue
Wellsville, NY 14895



ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 FAX +1 585 288 8475

Columbia Analytical Services, Inc.

Part of the ALS Group A Campbell Brothers Limited Company

Environmental

www.caslab.com • www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Columbia Analytical Services
 1565 Jefferson Road
 Bldg 300, Suite 360
 Rochester, NY 14623

800.695.7222
 www.caslab.com

Client: **Casella/On-Site**
 4376 Manning Ridge Road
 Palmed Post, NY 14870
 Project
 Manager **Joe Boyles/Jon Brandes**

CHAIN of CUSTODY
 Project: **Hakes C&D Landfill - Leachate**
 Telephone No. **585-593-1824**
 Fax No. **585-593-7471**

Page 2 of 2
 Method of Shipment
 Velocity
 Special Detection Limit / Reporting

Sample I.D.	Lab Sample No.	No. of Containers	Matrix				Sampling Date	Sampling Time	Total: Gamma Spec (901.1), Ra-226 (903.1), Ra-228 (904.0)	Total: Uranium (908.0)	Dissolved: Gamma Spec (901.1), Ra-226 (903.1), Ra-228 (904.0)	Dissolved: Uranium (908.0)	Ice	No Ice	Temperature received:	Received by (Sign & Print Name)	Date	Time	Turn Around Time (working days)
			Soil	Water	Air	Other													
Leachate-0512		8	X				1000	3	1	3	1								
C1Leach-0512		8	X				1140	3	1	3	1								
C2Leach-0512		8	X				1510	3	1	3	1								
C3Leach-0512		8	X				1430	3	1	3	1								
C4Leach-0512		8	X				1405	3	1	3	1								
C5Leach-0512		8	X				1220	3	1	3	1								
C6Leach-0512		8	X				1330	3	1	3	1								

PDF to Joe and On-Site.
 Hard copy and EDD to On-Site.

Note: Dissolved analysis requires lab filtering

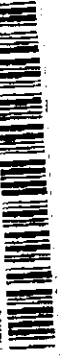
Sample Received Intact:	Yes	No
Refng. by sampler (Sign & Print Name)		
Retinquished by	<i>Kevin Dye</i>	<i>5/17/12 1600</i>
Retinquished by		
Retinquished by		

Received by: Gregory O. Esmerian ALS
Date: 5-24-12 @ 09125

Lab Work No.

R1203316

Casella Waste Systems
 Hakes C&D Landfill





Cooler Receipt and Preservation Check Form

Project/Client Casella/onsite Folder Number _____
 Cooler received on 5/24/12 by: MS/ALH COURIER: ALS UPS FEDEX Ground VELOCITY CLIENT

- Were custody seals on outside of cooler? YES NO
 - Were custody papers properly filled out (ink, signed, etc.)? YES NO
 - Did all bottles arrive in good condition (unbroken)? YES NO
 - Did VOA vials, Alkalinity, or Sulfide have significant* air bubbles? YES NO N/A
 - Were Ice or Ice packs present? YES NO
 - Where did the bottles originate? ALS/ROC CLIENT
 - Temperature of cooler(s) upon receipt: 4.6° 1.2° 5.4° 2.5° 2.6°
- Is the temperature within 0° - 6° C?: Yes Yes Yes Yes Yes
- If No, Explain Below: No No No No No

Date/Time Temperatures Taken: 5/24/12 0930
 Thermometer ID: IR GUN#3 IR GUN#4 Reading From: Temp Blank / Sample Bottle

If out of Temperature, note packing/ice condition & Client Approval to Run Samples:
 All Samples held in storage location Room by ME on 5/24/12 at 9:45
 5035 samples placed in storage location _____ by _____ on _____ at _____

PC Secondary Review: MS/5/24/12

- Cooler Breakdown: Date: _____ Time: _____ by: _____
- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
 - Did all bottle labels and tags agree with custody papers? YES NO
 - Were correct containers used for the tests indicated? YES NO
 - Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A
- Explain any discrepancies: _____

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
		YES	NO						
≥12	NaOH								
≤2	HNO ₃								
≤2	H ₂ SO ₄								
<4	NaHSO ₄								
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)					
	Na ₂ S ₂ O ₃	-	-						
	Zn Aceta	-	-						
	HCl	*	*						

Yes = All samples OK
 No = Samples were preserved at lab as listed
 PM OK to Adjust: _____

*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet

Bottle lot numbers: _____
 Other Comments: 1L bottle for GammaSpec, Radium 226+228 for C2each-0512 was onsite w/ lid adjac - only ~50mls remaining

PC Secondary Review: MS/6/14/12
 H:\SMODOCS\Cooler Receipt 5.doc

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

June 18, 2012

Ms. Janice Jaeger
ALS Environmental Columbia
1565 Jefferson Road
Building 300
Rochester, NY 14623

RE: Project: R1203316
Pace Project No.: 3070258

Dear Ms. Jaeger:

Enclosed are the analytical results for sample(s) received by the laboratory on May 25, 2012. 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,



Carin Ferris

carin.ferris@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

CERTIFICATIONS

Project: R1203316
Pace Project No.: 3070258

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACCLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/TNI Certification #: LA080002
Louisiana/TNI Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Virginia VELAP (Cert # 460198)
Washington Certification #: C868
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

REPORT OF LABORATORY ANALYSIS

SAMPLE SUMMARY

Project: R1203316
Pace Project No.: 3070258

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3070258001	Leachate-0512	Water	05/23/12 10:00	05/25/12 08:45
3070258002	C1Leach-0512	Water	05/23/12 11:40	05/25/12 08:45
3070258003	C2Leach-0512	Water	05/23/12 15:10	05/25/12 08:45
3070258004	C3Leach-0512	Water	05/23/12 14:30	05/25/12 08:45
3070258005	C4Leach-0512	Water	05/23/12 14:05	05/25/12 08:45
3070258006	C5Leach-0512	Water	05/23/12 12:20	05/25/12 08:45
3070258007	C6Leach-0512	Water	05/23/12 13:30	05/25/12 08:45
3070258008	Leachate-0512 Dissolved	Water	05/23/12 10:00	05/25/12 08:45
3070258009	C1Leach-0512 Dissolved	Water	05/23/12 11:40	05/25/12 08:45
3070258010	C2Leach-0512 Dissolved	Water	05/23/12 15:10	05/25/12 08:45
3070258011	C3Leach-0512 Dissolved	Water	05/23/12 14:30	05/25/12 08:45
3070258012	C4Leach-0512 Dissolved	Water	05/23/12 14:05	05/25/12 08:45
3070258013	C5Leach-0512 Dissolved	Water	05/23/12 12:20	05/25/12 08:45
3070258014	C6Leach-0512 Dissolved	Water	05/23/12 13:30	05/25/12 08:45
3070258015	C1ALeach-0512	Water	05/24/12 12:30	05/25/12 08:45
3070258016	C1ALeach-0512 Dissolved	Water	05/24/12 12:30	05/25/12 08:45

REPORT OF LABORATORY ANALYSIS

SAMPLE ANALYTE COUNT

Project: R1203316
Pace Project No.: 3070258

Lab ID	Sample ID	Method	Analysts	Analytes Reported
3070258001	Leachate-0512	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258002	C1Leach-0512	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258003	C2Leach-0512	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258004	C3Leach-0512	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258005	C4Leach-0512	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258006	C5Leach-0512	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258007	C6Leach-0512	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258008	Leachate-0512 Dissolved	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258009	C1Leach-0512 Dissolved	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258010	C2Leach-0512 Dissolved	EPA 901.1m	AEH	15

REPORT OF LABORATORY ANALYSIS

SAMPLE ANALYTE COUNT

Project: R1203316
Pace Project No.: 3070258

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258011	C3Leach-0512 Dissolved	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258012	C4Leach-0512 Dissolved	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258013	C5Leach-0512 Dissolved	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258014	C6Leach-0512 Dissolved	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258016	C1ALeach-0512	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1
3070258016	C1ALeach-0512 Dissolved	EPA 901.1m	AEH	15
		EPA 903.1	SLA	1
		EPA 904.0	WRR	1
		EPA 908.0	AMK	1

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: R1203316
Pace Project No.: 3070258

Method: EPA 901.1m
Description: 901.1 Gamma Spec
Client: ALS Environmental Columbia
Date: June 18, 2012

General Information:

16 samples were analyzed for EPA 901.1m. 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.

Method Blank:

All analytes were below the report limit in the method blank 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:

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: R1203316
Pace Project No.: 3070258

Method: EPA 903.1
Description: 903.1 Radium 226
Client: ALS Environmental Columbia
Date: June 18, 2012

General Information:

8 samples were analyzed for EPA 903.1. 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.

Method Blank:

All analytes were below the report limit in the method blank 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:

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: R1203316
Pace Project No.: 3070258

Method: EPA 903.1
Description: 903.1 Radium 226, Dissolved
Client: ALS Environmental Columbia
Date: June 18, 2012

General Information:

8 samples were analyzed for EPA 903.1. 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.

Method Blank:

All analytes were below the report limit in the method blank 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:

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: R1203316
Pace Project No.: 3070258

Method: EPA 904.0
Description: 904.0 Radium 228
Client: ALS Environmental Columbia
Date: June 18, 2012

General Information:

8 samples were analyzed for EPA 904.0. 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.

Method Blank:

All analytes were below the report limit in the method blank 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:

REPORT OF LABORATORY ANALYSIS

Page 9 of 27

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PROJECT NARRATIVE

Project: R1203316
Pace Project No.: 3070258

Method: EPA 904.0
Description: 904.0 Radium 228, Dissolved
Client: ALS Environmental Columbia
Date: June 18, 2012

General Information:

8 samples were analyzed for EPA 904.0. 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.

Method Blank:

All analytes were below the report limit in the method blank 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:

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: R1203316
Pace Project No.: 3070258

Method: EPA 908.0
Description: 908.0 Total Uranium
Client: ALS Environmental Columbia
Date: June 18, 2012

General Information:

16 samples were analyzed for EPA 908.0. 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.

Method Blank:

All analytes were below the report limit in the method blank 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:

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

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: R1203316
Pace Project No.: 3070258

Sample: Leachate-0512 Lab ID: 3070258001 Collected: 05/23/12 10:00 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-1.140 ± 12.4 (18.0)	pCi/L	05/31/12 11:33	14331-83-0	
Bismuth-212	EPA 901.1m	16.4 ± 39.0 (68.3)	pCi/L	05/31/12 11:33	14913-49-6	
Bismuth-214	EPA 901.1m	-2.330 ± 3.87 (51.8)	pCi/L	05/31/12 11:33	14733-03-0	
Cesium-134	EPA 901.1m	-0.751 ± 3.37 (5.54)	pCi/L	05/31/12 11:33	13967-70-9	
Cesium-137	EPA 901.1m	1.07 ± 2.45 (4.25)	pCi/L	05/31/12 11:33	10045-97-3	
Lead-212	EPA 901.1m	-1.360 ± 8.94 (9.32)	pCi/L	05/31/12 11:33	15092-94-1	
Lead-214	EPA 901.1m	-2.020 ± 11.0 (12.8)	pCi/L	05/31/12 11:33	15067-28-4	
Potassium-40	EPA 901.1m	-15.600 ± 76.2 (80.1)	pCi/L	05/31/12 11:33	13966-00-2	
Radium-226	EPA 901.1m	16.7 ± 55.7 (97.4)	pCi/L	05/31/12 11:33	13982-63-3	
Radium-228	EPA 901.1m	-1.140 ± 12.4 (18.0)	pCi/L	05/31/12 11:33	15262-20-1	
Thallium-208	EPA 901.1m	-0.961 ± 5.35 (5.53)	pCi/L	05/31/12 11:33	14913-50-9	
Thorium-232	EPA 901.1m	-1.140 ± 12.4 (18.0)	pCi/L	05/31/12 11:33	7440-29-1	
Thorium-234	EPA 901.1m	-5.310 ± 562 (973)	pCi/L	05/31/12 11:33	15065-10-8	
Uranium-235	EPA 901.1m	-9.300 ± 24.7 (41.8)	pCi/L	05/31/12 11:33	15117-96-1	
Uranium-238	EPA 901.1m	-24.700 ± 105 (127)	pCi/L	05/31/12 11:33		
Radium-226	EPA 903.1	0.509 ± 0.406 (0.468)	pCi/L	06/08/12 13:23	13982-63-3	
Radium-228	EPA 904.0	1.19 ± 0.538 (0.889)	pCi/L	06/06/12 12:35	15262-20-1	
Total Uranium	EPA 908.0	-0.960 ± 1.04 (3.10)	pCi/L	06/06/12 14:11	7440-61-1	

Sample: C1Leach-0512 Lab ID: 3070258002 Collected: 05/23/12 11:40 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-6.120 ± 276 (18.4)	pCi/L	05/31/12 12:35	14331-83-0	
Bismuth-212	EPA 901.1m	20.5 ± 41.5 (71.6)	pCi/L	05/31/12 12:35	14913-49-6	
Bismuth-214	EPA 901.1m	6.21 ± 4.50 (38.8)	pCi/L	05/31/12 12:35	14733-03-0	
Cesium-134	EPA 901.1m	2.14 ± 2.23 (5.83)	pCi/L	05/31/12 12:35	13967-70-9	
Cesium-137	EPA 901.1m	-0.955 ± 2.89 (5.02)	pCi/L	05/31/12 12:35	10045-97-3	
Lead-212	EPA 901.1m	9.01 ± 13.1 (10.5)	pCi/L	05/31/12 12:35	15092-94-1	
Lead-214	EPA 901.1m	17.4 ± 7.14 (9.61)	pCi/L	05/31/12 12:35	15067-28-4	
Potassium-40	EPA 901.1m	138 ± 42.1 (52.0)	pCi/L	05/31/12 12:35	13966-00-2	
Radium-226	EPA 901.1m	24.0 ± 69.5 (119)	pCi/L	05/31/12 12:35	13982-63-3	
Radium-228	EPA 901.1m	-6.120 ± 276 (18.4)	pCi/L	05/31/12 12:35	15262-20-1	
Thallium-208	EPA 901.1m	-0.886 ± 5.39 (5.67)	pCi/L	05/31/12 12:35	14913-50-9	
Thorium-232	EPA 901.1m	-6.120 ± 276 (18.4)	pCi/L	05/31/12 12:35	7440-29-1	
Thorium-234	EPA 901.1m	-12.600 ± 541 (936)	pCi/L	05/31/12 12:35	15065-10-8	
Uranium-235	EPA 901.1m	0.592 ± 0.780 (42.5)	pCi/L	05/31/12 12:35	15117-96-1	
Uranium-238	EPA 901.1m	66.4 ± 60.9 (83.3)	pCi/L	05/31/12 12:35		
Radium-226	EPA 903.1	1.05 ± 0.595 (0.630)	pCi/L	06/08/12 13:35	13982-63-3	
Radium-228	EPA 904.0	1.32 ± 0.565 (0.901)	pCi/L	06/06/12 12:35	15262-20-1	
Total Uranium	EPA 908.0	-1.15 ± 0.952 (3.01)	pCi/L	06/06/12 14:11	7440-61-1	

ANALYTICAL RESULTS

Project: R1203316
Pace Project No.: 3070258

Sample: C2Leach-0512 Lab ID: 3070258003 Collected: 05/23/12 15:10 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-7.120 ± 526 (12.9)	pCi/L	05/31/12 13:37	14331-83-0	
Bismuth-212	EPA 901.1m	24.8 ± 28.8 (47.9)	pCi/L	05/31/12 13:37	14913-49-6	
Bismuth-214	EPA 901.1m	0.471 ± 0.761 (29.4)	pCi/L	05/31/12 13:37	14733-03-0	
Cesium-134	EPA 901.1m	1.41 ± 2.44 (3.54)	pCi/L	05/31/12 13:37	13967-70-9	
Cesium-137	EPA 901.1m	1.62 ± 2.06 (3.38)	pCi/L	05/31/12 13:37	10045-97-3	
Lead-212	EPA 901.1m	24.8 ± 14.9 (7.26)	pCi/L	05/31/12 13:37	15092-94-1	
Lead-214	EPA 901.1m	25.5 ± 20.5 (8.57)	pCi/L	05/31/12 13:37	15067-28-4	
Potassium-40	EPA 901.1m	75.2 ± 35.2 (57.1)	pCi/L	05/31/12 13:37	13966-00-2	
Radium-226	EPA 901.1m	7.10 ± 58.1 (99.6)	pCi/L	05/31/12 13:37	13982-63-3	
Radium-228	EPA 901.1m	-7.120 ± 526 (12.9)	pCi/L	05/31/12 13:37	15262-20-1	
Thallium-208	EPA 901.1m	1.08 ± 1.06 (4.40)	pCi/L	05/31/12 13:37	14913-50-9	
Thorium-232	EPA 901.1m	-7.120 ± 526 (12.9)	pCi/L	05/31/12 13:37	7440-29-1	
Thorium-234	EPA 901.1m	-162.000 ± 518 (869)	pCi/L	05/31/12 13:37	15065-10-8	
Uranium-235	EPA 901.1m	-2.120 ± 19.6 (33.4)	pCi/L	05/31/12 13:37	15117-96-1	
Uranium-238	EPA 901.1m	-4.880 ± 195 (116)	pCi/L	05/31/12 13:37		
Radium-226	EPA 903.1	1.12 ± 0.551 (0.474)	pCi/L	06/08/12 13:34	13982-63-3	
Radium-228	EPA 904.0	2.46 ± 0.759 (0.925)	pCi/L	06/06/12 12:35	15262-20-1	
Total Uranium	EPA 908.0	-1.24 ± 0.917 (3.00)	pCi/L	06/06/12 14:11	7440-61-1	

Sample: C3Leach-0512 Lab ID: 3070258004 Collected: 05/23/12 14:30 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-1.580 ± 15.5 (19.2)	pCi/L	06/01/12 08:05	14331-83-0	
Bismuth-212	EPA 901.1m	-5.250 ± 1,320 (71.8)	pCi/L	06/01/12 08:05	14913-49-6	
Bismuth-214	EPA 901.1m	1.88 ± 2.10 (51.4)	pCi/L	06/01/12 08:05	14733-03-0	
Cesium-134	EPA 901.1m	0.428 ± 0.700 (5.39)	pCi/L	06/01/12 08:05	13967-70-9	
Cesium-137	EPA 901.1m	-0.198 ± 2.70 (4.85)	pCi/L	06/01/12 08:05	10045-97-3	
Lead-212	EPA 901.1m	-4.200 ± 181 (12.9)	pCi/L	06/01/12 08:05	15092-94-1	
Lead-214	EPA 901.1m	11.1 ± 7.56 (11.1)	pCi/L	06/01/12 08:05	15067-28-4	
Potassium-40	EPA 901.1m	101 ± 45.5 (69.5)	pCi/L	06/01/12 08:05	13966-00-2	
Radium-226	EPA 901.1m	6.37 ± 70.3 (123)	pCi/L	06/01/12 08:05	13982-63-3	
Radium-228	EPA 901.1m	-1.580 ± 15.5 (19.2)	pCi/L	06/01/12 08:05	15262-20-1	
Thallium-208	EPA 901.1m	-1.450 ± 8.41 (5.58)	pCi/L	06/01/12 08:05	14913-50-9	
Thorium-232	EPA 901.1m	-1.580 ± 15.5 (19.2)	pCi/L	06/01/12 08:05	7440-29-1	
Thorium-234	EPA 901.1m	-219.000 ± 620 (1,050)	pCi/L	06/01/12 08:05	15065-10-8	
Uranium-235	EPA 901.1m	-2.530 ± 24.1 (41.8)	pCi/L	06/01/12 08:05	15117-96-1	
Uranium-238	EPA 901.1m	58.9 ± 78.0 (129)	pCi/L	06/01/12 08:05		
Radium-226	EPA 903.1	1.23 ± 0.551 (0.145)	pCi/L	06/08/12 13:33	13982-63-3	
Radium-228	EPA 904.0	1.20 ± 0.547 (0.906)	pCi/L	06/06/12 12:36	15262-20-1	
Total Uranium	EPA 908.0	-1.91 ± 1.35 (3.96)	pCi/L	06/06/12 14:11	7440-61-1	

ANALYTICAL RESULTS

Project: R1203316
Pace Project No.: 3070258

Sample: C4Leach-0512 Lab ID: 3070258005 Collected: 05/23/12 14:05 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	4.03 ± 4.90 (17.3)	pCi/L	06/01/12 09:07	14331-83-0	
Bismuth-212	EPA 901.1m	0.646 ± 31.7 (57.4)	pCi/L	06/01/12 09:07	14913-49-6	
Bismuth-214	EPA 901.1m	43.1 ± 9.54 (36.2)	pCi/L	06/01/12 09:07	14733-03-0	
Cesium-134	EPA 901.1m	-2.850 ± 3.70 (6.00)	pCi/L	06/01/12 09:07	13967-70-9	
Cesium-137	EPA 901.1m	1.91 ± 1.72 (2.65)	pCi/L	06/01/12 09:07	10045-97-3	
Lead-212	EPA 901.1m	11.0 ± 13.2 (10.5)	pCi/L	06/01/12 09:07	15092-94-1	
Lead-214	EPA 901.1m	38.0 ± 10.6 (9.95)	pCi/L	06/01/12 09:07	15067-28-4	
Potassium-40	EPA 901.1m	-22.200 ± 77.2 (63.8)	pCi/L	06/01/12 09:07	13966-00-2	
Radium-226	EPA 901.1m	-1.850 ± 98.6 (118)	pCi/L	06/01/12 09:07	13982-63-3	
Radium-228	EPA 901.1m	4.03 ± 4.90 (17.3)	pCi/L	06/01/12 09:07	15262-20-1	
Thallium-208	EPA 901.1m	-0.364 ± 3.23 (4.94)	pCi/L	06/01/12 09:07	14913-50-9	
Thorium-232	EPA 901.1m	4.03 ± 4.90 (17.3)	pCi/L	06/01/12 09:07	7440-29-1	
Thorium-234	EPA 901.1m	260 ± 583 (973)	pCi/L	06/01/12 09:07	15065-10-8	
Uranium-235	EPA 901.1m	-1.220 ± 22.6 (38.7)	pCi/L	06/01/12 09:07	15117-96-1	
Uranium-238	EPA 901.1m	-3.260 ± 409 (128)	pCi/L	06/01/12 09:07		
Radium-226	EPA 903.1	0.574 ± 0.404 (0.422)	pCi/L	06/08/12 13:34	13982-63-3	
Radium-228	EPA 904.0	1.10 ± 0.563 (0.976)	pCi/L	06/06/12 12:35	15262-20-1	
Total Uranium	EPA 908.0	0.772 ± 0.745 (1.40)	pCi/L	06/06/12 14:11	7440-61-1	

Sample: C6Leach-0512 Lab ID: 3070258006 Collected: 05/23/12 12:20 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-2.900 ± 21.8 (17.4)	pCi/L	06/01/12 10:39	14331-83-0	
Bismuth-212	EPA 901.1m	2.36 ± 24.7 (45.6)	pCi/L	06/01/12 10:39	14913-49-6	
Bismuth-214	EPA 901.1m	6.83 ± 4.49 (34.4)	pCi/L	06/01/12 10:39	14733-03-0	
Cesium-134	EPA 901.1m	0.444 ± 0.507 (4.60)	pCi/L	06/01/12 10:39	13967-70-9	
Cesium-137	EPA 901.1m	-0.660 ± 2.48 (4.30)	pCi/L	06/01/12 10:39	10045-97-3	
Lead-212	EPA 901.1m	7.11 ± 10.2 (9.47)	pCi/L	06/01/12 10:39	15092-94-1	
Lead-214	EPA 901.1m	16.1 ± 11.7 (9.92)	pCi/L	06/01/12 10:39	15067-28-4	
Potassium-40	EPA 901.1m	19.3 ± 30.5 (58.8)	pCi/L	06/01/12 10:39	13966-00-2	
Radium-226	EPA 901.1m	5.94 ± 58.1 (101)	pCi/L	06/01/12 10:39	13982-63-3	
Radium-228	EPA 901.1m	-2.900 ± 21.8 (17.4)	pCi/L	06/01/12 10:39	15262-20-1	
Thallium-208	EPA 901.1m	-0.301 ± 3.36 (5.23)	pCi/L	06/01/12 10:39	14913-50-9	
Thorium-232	EPA 901.1m	-2.900 ± 21.8 (17.4)	pCi/L	06/01/12 10:39	7440-29-1	
Thorium-234	EPA 901.1m	253 ± 503 (840)	pCi/L	06/01/12 10:39	15065-10-8	
Uranium-235	EPA 901.1m	-4.340 ± 22.5 (38.2)	pCi/L	06/01/12 10:39	15117-96-1	
Uranium-238	EPA 901.1m	26.7 ± 31.5 (115)	pCi/L	06/01/12 10:39		
Radium-226	EPA 903.1	0.888 ± 0.494 (0.172)	pCi/L	06/08/12 13:24	13982-63-3	
Radium-228	EPA 904.0	0.549 ± 0.451 (0.894)	pCi/L	06/06/12 12:35	15262-20-1	
Total Uranium	EPA 908.0	-0.524 ± 0.415 (1.38)	pCi/L	06/06/12 14:11	7440-61-1	

ANALYTICAL RESULTS

Project: R1203316
Pace Project No.: 3070258

Sample: C6Leach-0512 Lab ID: 3070258007 Collected: 05/23/12 13:30 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	5.36 ± 42.7 (48.8)	pCi/L	05/31/12 15:44	14331-83-0	
Bismuth-212	EPA 901.1m	1.46 ± 101 (176)	pCi/L	05/31/12 15:44	14913-49-6	
Bismuth-214	EPA 901.1m	43.2 ± 38.4 (95.4)	pCi/L	05/31/12 15:44	14733-03-0	
Cesium-134	EPA 901.1m	-3.310 ± 7.74 (12.6)	pCi/L	05/31/12 15:44	13967-70-9	
Cesium-137	EPA 901.1m	-6.710 ± 7.62 (12.8)	pCi/L	05/31/12 15:44	10045-97-3	
Lead-212	EPA 901.1m	6.36 ± 18.3 (22.5)	pCi/L	05/31/12 15:44	15092-94-1	
Lead-214	EPA 901.1m	24.9 ± 15.2 (27.4)	pCi/L	05/31/12 15:44	15067-28-4	
Potassium-40	EPA 901.1m	-35.900 ± 139 (213)	pCi/L	05/31/12 15:44	13966-00-2	
Radium-226	EPA 901.1m	-55.100 ± 214 (281)	pCi/L	05/31/12 15:44	13982-63-3	
Radium-228	EPA 901.1m	5.36 ± 42.7 (48.8)	pCi/L	05/31/12 15:44	15262-20-1	
Thallium-208	EPA 901.1m	-0.295 ± 12.2 (14.5)	pCi/L	05/31/12 15:44	14913-50-9	
Thorium-232	EPA 901.1m	5.36 ± 42.7 (48.8)	pCi/L	05/31/12 15:44	7440-29-1	
Thorium-234	EPA 901.1m	399 ± 471 (759)	pCi/L	05/31/12 15:44	15065-10-8	
Uranium-235	EPA 901.1m	27.2 ± 47.2 (73.7)	pCi/L	05/31/12 15:44	15117-96-1	
Uranium-238	EPA 901.1m	289 ± 1,210 (2,070)	pCi/L	05/31/12 15:44		
Radium-226	EPA 903.1	1.97 ± 0.767 (0.162)	pCi/L	06/08/12 13:23	13982-63-3	
Radium-228	EPA 904.0	1.56 ± 0.604 (0.925)	pCi/L	06/06/12 12:36	15262-20-1	
Total Uranium	EPA 908.0	0.0510 ± 0.793 (1.86)	pCi/L	06/06/12 14:11	7440-61-1	

Sample: Leachate-0512 Dissolved Lab ID: 3070258008 Collected: 05/23/12 10:00 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	1.61 ± 8.98 (17.5)	pCi/L	06/01/12 13:43	14331-83-0	
Bismuth-212	EPA 901.1m	-3.330 ± 231 (75.2)	pCi/L	06/01/12 13:43	14913-49-6	
Bismuth-214	EPA 901.1m	5.58 ± 4.94 (37.8)	pCi/L	06/01/12 13:43	14733-03-0	
Cesium-134	EPA 901.1m	-1.270 ± 3.32 (5.50)	pCi/L	06/01/12 13:43	13967-70-9	
Cesium-137	EPA 901.1m	-0.002 ± 2.76 (4.99)	pCi/L	06/01/12 13:43	10045-97-3	
Lead-212	EPA 901.1m	5.46 ± 7.83 (9.53)	pCi/L	06/01/12 13:43	15092-94-1	
Lead-214	EPA 901.1m	1.35 ± 2.66 (12.5)	pCi/L	06/01/12 13:43	15067-28-4	
Potassium-40	EPA 901.1m	9.24 ± 36.6 (70.9)	pCi/L	06/01/12 13:43	13966-00-2	
Radium-226	EPA 901.1m	39.5 ± 71.9 (121)	pCi/L	06/01/12 13:43	13982-63-3	
Radium-228	EPA 901.1m	1.61 ± 8.98 (17.5)	pCi/L	06/01/12 13:43	15262-20-1	
Thallium-208	EPA 901.1m	-2.450 ± 45.2 (5.70)	pCi/L	06/01/12 13:43	14913-50-9	
Thorium-232	EPA 901.1m	1.51 ± 8.98 (17.5)	pCi/L	06/01/12 13:43	7440-29-1	
Thorium-234	EPA 901.1m	23.6 ± 596 (1,030)	pCi/L	06/01/12 13:43	15065-10-8	
Uranium-235	EPA 901.1m	11.4 ± 18.1 (26.1)	pCi/L	06/01/12 13:43	15117-96-1	
Uranium-238	EPA 901.1m	34.1 ± 67.1 (114)	pCi/L	06/01/12 13:43		
Radium-226, Dissolved	EPA 903.1	0.715 ± 0.486 (0.554)	pCi/L	06/08/12 11:30	13982-63-3	
Radium-228, Dissolved	EPA 904.0	1.11 ± 0.516 (0.826)	pCi/L	06/06/12 12:29	15262-20-1	
Total Uranium	EPA 908.0	-0.376 ± 0.713 (1.87)	pCi/L	06/06/12 14:11	7440-61-1	

ANALYTICAL RESULTS

Project: R1203316
Pace Project No.: 3070258

Sample: C1Leach-0512 Dissolved Lab ID: 3070258009 Collected: 05/23/12 11:40 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	5.15 ± 7.66 (15.0)	pCi/L	06/01/12 14:46	14331-83-0	
Bismuth-212	EPA 901.1m	-5.440 ± 2.610 (51.5)	pCi/L	06/01/12 14:46	14913-49-6	
Bismuth-214	EPA 901.1m	6.57 ± 3.71 (38.3)	pCi/L	06/01/12 14:46	14733-03-0	
Cesium-134	EPA 901.1m	0.148 ± 4.00 (6.80)	pCi/L	06/01/12 14:46	13967-70-9	
Cesium-137	EPA 901.1m	2.49 ± 2.21 (3.50)	pCi/L	06/01/12 14:46	10045-97-3	
Lead-212	EPA 901.1m	4.04 ± 6.37 (7.92)	pCi/L	06/01/12 14:46	15092-94-1	
Lead-214	EPA 901.1m	12.7 ± 7.35 (8.96)	pCi/L	06/01/12 14:46	15067-28-4	
Potassium-40	EPA 901.1m	126 ± 41.0 (46.0)	pCi/L	06/01/12 14:46	13966-00-2	
Radium-226	EPA 901.1m	-13.000 ± 656 (104)	pCi/L	06/01/12 14:46	13982-63-3	
Radium-228	EPA 901.1m	5.15 ± 7.66 (15.0)	pCi/L	06/01/12 14:46	15262-20-1	
Thallium-208	EPA 901.1m	1.89 ± 2.04 (4.85)	pCi/L	06/01/12 14:46	14913-50-9	
Thorium-232	EPA 901.1m	5.15 ± 7.66 (15.0)	pCi/L	06/01/12 14:46	7440-29-1	
Thorium-234	EPA 901.1m	-9.590 ± 404 (691)	pCi/L	06/01/12 14:46	15065-10-8	
Uranium-235	EPA 901.1m	30.8 ± 21.7 (27.7)	pCi/L	06/01/12 14:46	15117-96-1	
Uranium-238	EPA 901.1m	29.6 ± 66.2 (112)	pCi/L	06/01/12 14:46		
Radium-226, Dissolved	EPA 903.1	1.05 ± 0.586 (0.571)	pCi/L	06/08/12 11:30	13982-63-3	
Radium-228, Dissolved	EPA 904.0	1.12 ± 0.502 (0.816)	pCi/L	06/06/12 13:51	15262-20-1	
Total Uranium	EPA 908.0	0.848 ± 1.37 (2.89)	pCi/L	06/06/12 14:11	7440-61-1	

Sample: C2Leach-0512 Dissolved Lab ID: 3070258010 Collected: 05/23/12 15:10 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-6.610 ± 18.2 (31.1)	pCi/L	06/01/12 10:31	14331-83-0	
Bismuth-212	EPA 901.1m	-8.130 ± 60.6 (105)	pCi/L	06/01/12 10:31	14913-49-6	
Bismuth-214	EPA 901.1m	428 ± 33.1 (54.3)	pCi/L	06/01/12 10:31	14733-03-0	
Cesium-134	EPA 901.1m	1.57 ± 4.78 (7.36)	pCi/L	06/01/12 10:31	13967-70-9	
Cesium-137	EPA 901.1m	1.45 ± 5.36 (8.20)	pCi/L	06/01/12 10:31	10045-97-3	
Lead-212	EPA 901.1m	-1.310 ± 7.89 (13.1)	pCi/L	06/01/12 10:31	15092-94-1	
Lead-214	EPA 901.1m	410 ± 39.2 (15.3)	pCi/L	06/01/12 10:31	15067-28-4	
Potassium-40	EPA 901.1m	35.6 ± 62.3 (116)	pCi/L	06/01/12 10:31	13966-00-2	
Radium-226	EPA 901.1m	-65.400 ± 113 (191)	pCi/L	06/01/12 10:31	13982-63-3	
Radium-228	EPA 901.1m	-6.610 ± 18.2 (31.1)	pCi/L	06/01/12 10:31	15262-20-1	
Thallium-208	EPA 901.1m	-1.810 ± 5.10 (8.44)	pCi/L	06/01/12 10:31	14913-50-9	
Thorium-232	EPA 901.1m	-6.610 ± 18.2 (31.1)	pCi/L	06/01/12 10:31	7440-29-1	
Thorium-234	EPA 901.1m	102 ± 122 (211)	pCi/L	06/01/12 10:31	15065-10-8	
Uranium-235	EPA 901.1m	5.34 ± 32.1 (48.9)	pCi/L	06/01/12 10:31	15117-96-1	
Uranium-238	EPA 901.1m	34.7 ± 825 (1,430)	pCi/L	06/01/12 10:31		
Radium-226, Dissolved	EPA 903.1	1.63 ± 0.738 (0.712)	pCi/L	06/08/12 11:54	13982-63-3	
Radium-228, Dissolved	EPA 904.0	1.94 ± 0.636 (0.858)	pCi/L	06/06/12 14:11	15262-20-1	
Total Uranium	EPA 908.0	-0.299 ± 0.530 (1.48)	pCi/L	06/06/12 14:11	7440-61-1	

ANALYTICAL RESULTS

Project: R1203316
Pace Project No.: 3070258

Sample: C3Leach-0512 Dissolved Lab ID: 3070258011 Collected: 05/23/12 14:30 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	12.5 ± 6.37 (12.0)	pCi/L	06/04/12 07:27	14331-83-0	
Bismuth-212	EPA 901.1m	-19.700 ± 175 (65.1)	pCi/L	06/04/12 07:27	14913-49-6	
Bismuth-214	EPA 901.1m	3.30 ± 3.70 (33.2)	pCi/L	06/04/12 07:27	14733-03-0	
Cesium-134	EPA 901.1m	-1.970 ± 3.23 (4.98)	pCi/L	06/04/12 07:27	13967-70-9	
Cesium-137	EPA 901.1m	0.0350 ± 2.24 (4.02)	pCi/L	06/04/12 07:27	10045-97-3	
Lead-212	EPA 901.1m	36.1 ± 21.4 (7.33)	pCi/L	06/04/12 07:27	15092-94-1	
Lead-214	EPA 901.1m	42.4 ± 24.0 (10.3)	pCi/L	06/04/12 07:27	15067-28-4	
Potassium-40	EPA 901.1m	179 ± 52.8 (47.0)	pCi/L	06/04/12 07:27	13966-00-2	
Radium-226	EPA 901.1m	44.5 ± 62.1 (104)	pCi/L	06/04/12 07:27	13982-63-3	
Radium-228	EPA 901.1m	12.5 ± 6.37 (12.0)	pCi/L	06/04/12 07:27	15262-20-1	
Thallium-208	EPA 901.1m	2.89 ± 3.31 (4.31)	pCi/L	06/04/12 07:27	14913-50-9	
Thorium-232	EPA 901.1m	12.5 ± 6.37 (12.0)	pCi/L	06/04/12 07:27	7440-29-1	
Thorium-234	EPA 901.1m	-131.000 ± 636 (1,070)	pCi/L	06/04/12 07:27	15065-10-8	
Uranium-235	EPA 901.1m	0.112 ± 21.4 (36.8)	pCi/L	06/04/12 07:27	15117-96-1	
Uranium-238	EPA 901.1m	-1.830 ± 105 (119)	pCi/L	06/04/12 07:27		
Radium-226, Dissolved	EPA 903.1	0.731 ± 0.545 (0.737)	pCi/L	06/08/12 11:30	13982-63-3	
Radium-228, Dissolved	EPA 904.0	1.27 ± 0.536 (0.820)	pCi/L	06/06/12 12:30	15262-20-1	
Total Uranium	EPA 908.0	0.982 ± 0.792 (1.40)	pCi/L	06/07/12 07:24	7440-61-1	

Sample: C4Leach-0512 Dissolved Lab ID: 3070258012 Collected: 05/23/12 14:05 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-0.042 ± 0.0720 (16.1)	pCi/L	06/04/12 09:00	14331-83-0	
Bismuth-212	EPA 901.1m	1.83 ± 35.4 (64.3)	pCi/L	06/04/12 09:00	14913-49-6	
Bismuth-214	EPA 901.1m	8.50 ± 5.78 (31.3)	pCi/L	06/04/12 09:00	14733-03-0	
Cesium-134	EPA 901.1m	-0.555 ± 3.52 (4.61)	pCi/L	06/04/12 09:00	13967-70-9	
Cesium-137	EPA 901.1m	0.224 ± 2.50 (4.43)	pCi/L	06/04/12 09:00	10045-97-3	
Lead-212	EPA 901.1m	0.147 ± 5.23 (9.35)	pCi/L	06/04/12 09:00	15092-94-1	
Lead-214	EPA 901.1m	10.4 ± 6.01 (7.86)	pCi/L	06/04/12 09:00	15067-28-4	
Potassium-40	EPA 901.1m	1.45 ± 29.8 (57.8)	pCi/L	06/04/12 09:00	13966-00-2	
Radium-226	EPA 901.1m	-11.700 ± 642 (93.9)	pCi/L	06/04/12 09:00	13982-63-3	
Radium-228	EPA 901.1m	-0.042 ± 0.0720 (16.1)	pCi/L	06/04/12 09:00	15262-20-1	
Thallium-208	EPA 901.1m	1.39 ± 2.46 (4.28)	pCi/L	06/04/12 09:00	14913-50-9	
Thorium-232	EPA 901.1m	-0.042 ± 0.0720 (16.1)	pCi/L	06/04/12 09:00	7440-29-1	
Thorium-234	EPA 901.1m	-175.000 ± 551 (928)	pCi/L	06/04/12 09:00	15065-10-8	
Uranium-235	EPA 901.1m	-12.900 ± 21.9 (36.5)	pCi/L	06/04/12 09:00	15117-96-1	
Uranium-238	EPA 901.1m	15.3 ± 64.6 (112)	pCi/L	06/04/12 09:00		
Radium-226, Dissolved	EPA 903.1	0.348 ± 0.365 (0.539)	pCi/L	06/08/12 11:30	13982-63-3	
Radium-228, Dissolved	EPA 904.0	0.694 ± 0.476 (0.896)	pCi/L	06/06/12 12:38	15262-20-1	
Total Uranium	EPA 908.0	0.350 ± 0.641 (1.38)	pCi/L	06/07/12 07:24	7440-61-1	

ANALYTICAL RESULTS

Project: R1203316
Pace Project No.: 3070258

Sample: C5Leach-0512 Dissolved Lab ID: 3070258013 Collected: 05/23/12 12:20 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-7.120 ± 904 (15.8)	pCi/L	06/04/12 12:33	14331-83-0	
Bismuth-212	EPA 901.1m	-13.700 ± 1,880 (53.5)	pCi/L	06/04/12 12:33	14913-49-6	
Bismuth-214	EPA 901.1m	7.46 ± 7.57 (31.0)	pCi/L	06/04/12 12:33	14733-03-0	
Cesium-134	EPA 901.1m	-0.057 ± 16.7 (4.26)	pCi/L	06/04/12 12:33	13967-70-9	
Cesium-137	EPA 901.1m	-0.232 ± 32.5 (4.00)	pCi/L	06/04/12 12:33	10045-97-3	
Lead-212	EPA 901.1m	8.85 ± 15.6 (7.97)	pCi/L	06/04/12 12:33	15092-94-1	
Lead-214	EPA 901.1m	13.1 ± 19.0 (10.2)	pCi/L	06/04/12 12:33	15067-28-4	
Potassium-40	EPA 901.1m	42.0 ± 32.5 (55.2)	pCi/L	06/04/12 12:33	13966-00-2	
Radium-226	EPA 901.1m	34.6 ± 57.6 (97.3)	pCi/L	06/04/12 12:33	13982-63-3	
Radium-228	EPA 901.1m	-7.120 ± 904 (15.8)	pCi/L	06/04/12 12:33	15262-20-1	
Thallium-208	EPA 901.1m	2.12 ± 2.48 (4.58)	pCi/L	06/04/12 12:33	14913-50-9	
Thorium-232	EPA 901.1m	-7.120 ± 904 (15.8)	pCi/L	06/04/12 12:33	7440-29-1	
Thorium-234	EPA 901.1m	-7.250 ± 453 (777)	pCi/L	06/04/12 12:33	15065-10-8	
Uranium-235	EPA 901.1m	0.360 ± 20.5 (35.4)	pCi/L	06/04/12 12:33	15117-96-1	
Uranium-238	EPA 901.1m	3.17 ± 71.6 (125)	pCi/L	06/04/12 12:33		
Radium-226, Dissolved	EPA 903.1	0.427 ± 0.326 (0.165)	pCi/L	06/08/12 11:54	13982-63-3	
Radium-228, Dissolved	EPA 904.0	1.26 ± 0.580 (0.965)	pCi/L	06/06/12 12:34	15262-20-1	
Total Uranium	EPA 908.0	1.09 ± 0.975 (1.86)	pCi/L	06/07/12 07:24	7440-61-1	

Sample: C6Leach-0512 Dissolved Lab ID: 3070258014 Collected: 05/23/12 13:30 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-30.200 ± 39.3 (53.6)	pCi/L	05/31/12 15:46	14331-83-0	
Bismuth-212	EPA 901.1m	105 ± 115 (200)	pCi/L	05/31/12 15:46	14913-49-6	
Bismuth-214	EPA 901.1m	1,870 ± 108 (103)	pCi/L	05/31/12 15:46	14733-03-0	
Cesium-134	EPA 901.1m	6.82 ± 8.92 (13.3)	pCi/L	05/31/12 15:46	13967-70-9	
Cesium-137	EPA 901.1m	-2.220 ± 9.76 (13.9)	pCi/L	05/31/12 15:46	10045-97-3	
Lead-212	EPA 901.1m	-1.910 ± 16.9 (24.7)	pCi/L	05/31/12 15:46	15092-94-1	
Lead-214	EPA 901.1m	1,910 ± 144 (28.9)	pCi/L	05/31/12 15:46	15067-28-4	
Potassium-40	EPA 901.1m	61.0 ± 135 (195)	pCi/L	05/31/12 15:46	13966-00-2	
Radium-226	EPA 901.1m	-93.300 ± 247 (350)	pCi/L	05/31/12 15:46	13982-63-3	
Radium-228	EPA 901.1m	-30.200 ± 39.3 (53.6)	pCi/L	05/31/12 15:46	15262-20-1	
Thallium-208	EPA 901.1m	-6.460 ± 11.5 (15.1)	pCi/L	05/31/12 15:46	14913-50-9	
Thorium-232	EPA 901.1m	-30.200 ± 39.3 (53.6)	pCi/L	05/31/12 15:46	7440-29-1	
Thorium-234	EPA 901.1m	196 ± 234 (380)	pCi/L	05/31/12 15:46	15065-10-8	
Uranium-235	EPA 901.1m	1.77 ± 53.9 (87.0)	pCi/L	05/31/12 15:46	15117-96-1	
Uranium-238	EPA 901.1m	-1,060.000 ± 1,730 (2,390)	pCi/L	05/31/12 15:46		
Radium-226, Dissolved	EPA 903.1	1.19 ± 0.582 (0.501)	pCi/L	06/08/12 12:05	13982-63-3	
Radium-228, Dissolved	EPA 904.0	0.810 ± 0.515 (0.958)	pCi/L	06/06/12 12:34	15262-20-1	
Total Uranium	EPA 908.0	-0.233 ± 0.739 (1.87)	pCi/L	06/07/12 07:24	7440-61-1	

ANALYTICAL RESULTS

Project: R1203316
Pace Project No.: 3070258

Sample: C1ALeach-0512 Lab ID: 3070258015 Collected: 05/24/12 12:30 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-2.640 ± 16.8 (20.0)	pCi/L	06/12/12 14:42	14331-83-0	
Bismuth-212	EPA 901.1m	-4.580 ± 183 (43.5)	pCi/L	06/12/12 14:42	14913-49-6	
Bismuth-214	EPA 901.1m	7.15 ± 19.6 (34.7)	pCi/L	06/12/12 14:42	14733-03-0	
Cesium-134	EPA 901.1m	-0.641 ± 3.38 (5.85)	pCi/L	06/12/12 14:42	13967-70-9	
Cesium-137	EPA 901.1m	0.289 ± 2.65 (4.75)	pCi/L	06/12/12 14:42	10045-97-3	
Lead-212	EPA 901.1m	8.76 ± 11.2 (9.99)	pCi/L	06/12/12 14:42	15092-94-1	
Lead-214	EPA 901.1m	7.30 ± 9.32 (12.4)	pCi/L	06/12/12 14:42	15067-28-4	
Potassium-40	EPA 901.1m	17.9 ± 36.2 (69.3)	pCi/L	06/12/12 14:42	13966-00-2	
Radium-226	EPA 901.1m	52.2 ± 56.1 (79.0)	pCi/L	06/12/12 14:42	13982-63-3	
Radium-228	EPA 901.1m	-2.640 ± 16.8 (20.0)	pCi/L	06/12/12 14:42	15262-20-1	
Thallium-208	EPA 901.1m	-0.167 ± 3.43 (5.93)	pCi/L	06/12/12 14:42	14913-50-9	
Thorium-232	EPA 901.1m	-2.640 ± 16.8 (20.0)	pCi/L	06/12/12 14:42	7440-29-1	
Thorium-234	EPA 901.1m	-345.000 ± 699 (1,170)	pCi/L	06/12/12 14:42	15065-10-8	
Uranium-235	EPA 901.1m	9.42 ± 17.5 (40.6)	pCi/L	06/12/12 14:42	15117-96-1	
Uranium-238	EPA 901.1m	-11.600 ± 465 (147)	pCi/L	06/12/12 14:42		
Radium-226	EPA 903.1	1.61 ± 0.665 (0.395)	pCi/L	06/08/12 13:50	13982-63-3	
Radium-228	EPA 904.0	1.16 ± 0.565 (0.964)	pCi/L	06/06/12 12:37	15262-20-1	
Total Uranium	EPA 908.0	0.424 ± 1.27 (2.89)	pCi/L	06/07/12 07:24	7440-61-1	

Sample: C1ALeach-0512 Dissolved Lab ID: 3070258016 Collected: 05/24/12 12:30 Received: 05/25/12 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-228	EPA 901.1m	-0.056 ± 10.7 (20.8)	pCi/L	06/12/12 15:44	14331-83-0	
Bismuth-212	EPA 901.1m	17.0 ± 36.4 (63.4)	pCi/L	06/12/12 15:44	14913-49-6	
Bismuth-214	EPA 901.1m	0.992 ± 18.5 (34.2)	pCi/L	06/12/12 15:44	14733-03-0	
Cesium-134	EPA 901.1m	-0.775 ± 2.88 (4.99)	pCi/L	06/12/12 15:44	13967-70-9	
Cesium-137	EPA 901.1m	0.0580 ± 2.74 (4.95)	pCi/L	06/12/12 15:44	10045-97-3	
Lead-212	EPA 901.1m	0.520 ± 5.33 (9.70)	pCi/L	06/12/12 15:44	15092-94-1	
Lead-214	EPA 901.1m	-2.500 ± 11.3 (12.1)	pCi/L	06/12/12 15:44	15067-28-4	
Potassium-40	EPA 901.1m	129 ± 44.3 (51.3)	pCi/L	06/12/12 15:44	13966-00-2	
Radium-226	EPA 901.1m	19.4 ± 63.0 (109)	pCi/L	06/12/12 15:44	13982-63-3	
Radium-228	EPA 901.1m	-0.056 ± 10.7 (20.8)	pCi/L	06/12/12 15:44	15262-20-1	
Thallium-208	EPA 901.1m	0.332 ± 0.526 (5.40)	pCi/L	06/12/12 15:44	14913-50-9	
Thorium-232	EPA 901.1m	-0.056 ± 10.7 (20.8)	pCi/L	06/12/12 15:44	7440-29-1	
Thorium-234	EPA 901.1m	-303.000 ± 607 (1,020)	pCi/L	06/12/12 15:44	15065-10-8	
Uranium-235	EPA 901.1m	0.101 ± 19.0 (33.5)	pCi/L	06/12/12 15:44	15117-96-1	
Uranium-238	EPA 901.1m	22.6 ± 74.5 (130)	pCi/L	06/12/12 15:44		
Radium-226, Dissolved	EPA 903.1	0.608 ± 0.406 (0.407)	pCi/L	06/08/12 12:04	13982-63-3	
Radium-228, Dissolved	EPA 904.0	0.947 ± 0.542 (0.973)	pCi/L	06/06/12 12:33	15262-20-1	
Total Uranium	EPA 908.0	0.281 ± 0.667 (1.48)	pCi/L	06/07/12 07:24	7440-61-1	

QUALITY CONTROL DATA

Project: R1203316
Pace Project No.: 3070258

QC Batch: RADC/12184 Analysis Method: EPA 901.1m
QC Batch Method: EPA 901.1m Analysis Description: 901.1 Gamma Spec
Associated Lab Samples: 3070258001, 3070258002, 3070258003, 3070258004, 3070258005, 3070258006, 3070258008, 3070258009, 3070258011, 3070258012, 3070258013, 3070258015, 3070258016

METHOD BLANK: 445476 Matrix: Water
Associated Lab Samples: 3070258001, 3070258002, 3070258003, 3070258004, 3070258005, 3070258006, 3070258008, 3070258009, 3070258011, 3070258012, 3070258013, 3070258015, 3070258016

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Actinium-228	-3.630 ± 20.6 (15.1)	pCi/L	06/04/12 10:31	
Bismuth-212	-6.930 ± 86.9 (55.6)	pCi/L	06/04/12 10:31	
Bismuth-214	12.2 ± 15.0 (27.8)	pCi/L	06/04/12 10:31	
Cesium-134	-0.083 ± 3.31 (5.40)	pCi/L	06/04/12 10:31	
Cesium-137	-0.547 ± 5.08 (3.83)	pCi/L	06/04/12 10:31	
Lead-212	0.685 ± 4.16 (7.48)	pCi/L	06/04/12 10:31	
Lead-214	6.06 ± 6.58 (8.09)	pCi/L	06/04/12 10:31	
Potassium-40	-3.340 ± 28.9 (47.8)	pCi/L	06/04/12 10:31	
Radium-226	-1.840 ± 63.7 (87.0)	pCi/L	06/04/12 10:31	
Radium-228	-3.630 ± 20.6 (15.1)	pCi/L	06/04/12 10:31	
Thallium-208	0.935 ± 1.34 (4.39)	pCi/L	06/04/12 10:31	
Thorium-232	-3.630 ± 20.6 (15.1)	pCi/L	06/04/12 10:31	
Thorium-234	-86.700 ± 424 (718)	pCi/L	06/04/12 10:31	
Uranium-235	0.929 ± 14.3 (24.8)	pCi/L	06/04/12 10:31	
Uranium-238	-24.600 ± 114 (89.2)	pCi/L	06/04/12 10:31	

QUALITY CONTROL DATA

Project: R1203316
Pace Project No.: 3070258

QC Batch: RADC/12187 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226, Dissolved
Associated Lab Samples: 3070258008, 3070258009, 3070258010, 3070258011, 3070258012, 3070258013, 3070258014, 3070258016

METHOD BLANK: 446017 Matrix: Water
Associated Lab Samples: 3070258008, 3070258009, 3070258010, 3070258011, 3070258012, 3070258013, 3070258014, 3070258016

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226, Dissolved	-0.057 ± 0.336 (0.748)	pCi/L	06/08/12 11:15	

QUALITY CONTROL DATA

Project: R1203316
Pace Project No.: 3070258

QC Batch: RADC/12188 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228, Dissolved
Associated Lab Samples: 3070258008, 3070258009, 3070258010, 3070258011, 3070258012, 3070258013, 3070258014, 3070258016

METHOD BLANK: 446018 Matrix: Water
Associated Lab Samples: 3070258008, 3070258009, 3070258010, 3070258011, 3070258012, 3070258013, 3070258014, 3070258016

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228, Dissolved	0.823 ± 0.533 (0.985)	pCi/L	06/05/12 18:02	

QUALITY CONTROL DATA

Project: R1203316
Pace Project No.: 3070258

QC Batch:	RADC/12197	Analysis Method:	EPA 908.0
QC Batch Method:	EPA 908.0	Analysis Description:	908.0 Total Uranium
Associated Lab Samples:	3070258001, 3070258002, 3070258003, 3070258004, 3070258005, 3070258006, 3070258007, 3070258008, 3070258009, 3070258010, 3070258011, 3070258012, 3070258013, 3070258014, 3070258015, 3070258016		

METHOD BLANK:	446045	Matrix:	Water
Associated Lab Samples:	3070258001, 3070258002, 3070258003, 3070258004, 3070258005, 3070258006, 3070258007, 3070258008, 3070258009, 3070258010, 3070258011, 3070258012, 3070258013, 3070258014, 3070258015, 3070258016		

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Total Uranium	-0.171 ± 0.372 (0.923)	pCi/L	06/06/12 14:06	

QUALITY CONTROL DATA

Project: R1203316
Pace Project No.: 3070258

QC Batch: RADC/12205 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 3070258001, 3070258002, 3070258003, 3070258004, 3070258005, 3070258006, 3070258007, 3070258015

METHOD BLANK: 446113 Matrix: Water
Associated Lab Samples: 3070258001, 3070258002, 3070258003, 3070258004, 3070258005, 3070258006, 3070258007, 3070258015

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.060 ± 0.393 (0.852)	pCi/L	06/08/12 12:55	

QUALITY CONTROL DATA

Project: R1203316
Pace Project No.: 3070258

QC Batch: RADC/12208 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 3070258001, 3070258002, 3070258003, 3070258004, 3070258005, 3070258006, 3070258007, 3070258015

METHOD BLANK: 446117 Matrix: Water
Associated Lab Samples: 3070258001, 3070258002, 3070258003, 3070258004, 3070258005, 3070258006, 3070258007, 3070258015

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	-0.105 ± 0.420 (0.936)	pCi/L	06/05/12 15:59	

QUALITY CONTROL DATA

Project: R1203316
Pace Project No.: 3070258

QC Batch: RADC/12236 Analysis Method: EPA 901.1m
QC Batch Method: EPA 901.1m Analysis Description: 901.1 Gamma Spec
Associated Lab Samples: 3070258007, 3070258010, 3070258014

METHOD BLANK: 446968 Matrix: Water
Associated Lab Samples: 3070258007, 3070258010, 3070258014

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Actinium-228	73.4 ± 49.8 (47.4)	pCi/L	06/01/12 14:47	
Bismuth-212	-16.300 ± 101 (174)	pCi/L	06/01/12 14:47	
Bismuth-214	38.1 ± 51.5 (94.2)	pCi/L	06/01/12 14:47	
Cesium-134	-4.460 ± 7.68 (12.4)	pCi/L	06/01/12 14:47	
Cesium-137	6.36 ± 7.42 (13.5)	pCi/L	06/01/12 14:47	
Lead-212	10.9 ± 17.6 (21.1)	pCi/L	06/01/12 14:47	
Lead-214	19.0 ± 14.5 (26.1)	pCi/L	06/01/12 14:47	
Potassium-40	-122.000 ± 139 (205)	pCi/L	06/01/12 14:47	
Radium-226	-174.000 ± 208 (264)	pCi/L	06/01/12 14:47	
Radium-228	73.4 ± 49.8 (47.4)	pCi/L	06/01/12 14:47	
Thallium-208	-2.790 ± 11.9 (13.9)	pCi/L	06/01/12 14:47	
Thorium-232	73.4 ± 49.8 (47.4)	pCi/L	06/01/12 14:47	
Thorium-234	172 ± 415 (677)	pCi/L	06/01/12 14:47	
Uranium-235	-11.800 ± 40.3 (68.4)	pCi/L	06/01/12 14:47	
Uranium-238	425 ± 1,200 (2,080)	pCi/L	06/01/12 14:47	

QUALIFIERS

Project: R1203316
Pace Project No.: 3070258

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.

PRL - Pace Reporting 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.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

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

TNI - The NELAC Institute.

Columbia Analytical Services, Inc. Chain of Custody
 1565 Jefferson Rd. Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

CAS Contact: Janice Jaeger

Project Number: R1203316
 Project Manager: Janice Jaeger

3070258

Lab Code	Sample ID	# of Cont.	Matrix	Date	Sample Time	Lab ID
R1203316-001	Leachate-0512	2	Water	5/23/12	1000	Pace PA
R1203316-002	C1 Leach-0512		Water	5/23/12	1140	Pace PA
R1203316-003	C2 Leach-0512		Water	5/23/12	1510	Pace PA
R1203316-004	C3 Leach-0512		Water	5/23/12	1430	Pace PA
R1203316-005	C4 Leach-0512		Water	5/23/12	1405	Pace PA
R1203316-006	C5 Leach-0512		Water	5/23/12	1220	Pace PA
R1203316-007	C6 Leach-0512		Water	5/23/12	1330	Pace PA
R1203316-008	Leachate-0512 Dissolved		Water	5/23/12	1000	Pace PA
R1203316-009	C11 Leach-0512 Dissolved		Water	5/23/12	1140	Pace PA
R1203316-010	C2 Leach-0512 Dissolved		Water	5/23/12	1510	Pace PA
R1203316-011	C3 Leach-0512 Dissolved		Water	5/23/12	1430	Pace PA
R1203316-012	C4 Leach-0512 Dissolved		Water	5/23/12	1405	Pace PA

Radium 226
 Radium 228

Special Instructions/Comments	Turnaround Requirements RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 <input checked="" type="checkbox"/> STANDARD Requested FAX Date: _____ Requested Report Date: 06/07/12	Report Requirements <input type="checkbox"/> I. Results Only <input type="checkbox"/> II. Results + QC Summaries <input type="checkbox"/> III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data PQI/MDLI/ <u>N</u> EDD <u>Y</u>	Invoice Information PO# R1203316 Bill to _____
	Relinquished By: <u>Angela [Signature]</u> 5/24/12	Received By: <u>[Signature]</u> 5/25/12	Airbill Number: 08-15

Columbia Analytical Services, Inc. Chain of Custody
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CAS Contact: Janice Jaeger

Project Number: R1203316
 Project Manager: Janice Jaeger

3070258

Lab Code	Sample ID	# of Cont.	Matrix	Sample		Lab ID
				Date	Time	
R1203316-013	C5Leach-0512 Dissolved	2	Water	5/23/12	1220	Pace PA
R1203316-014	C6Leach-0512 Dissolved	1	Water	5/23/12	1330	Pace PA

Radium 226
 Radium 228

Special Instructions/Comments	Turnaround Requirements RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 STANDARD Requested FAX Date: _____ Requested Report Date: 06/07/12	Report Requirements I. Results Only II. Results + QC Summaries III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data POL/MDI/J <u>N</u> EDD <u>Y</u>	Invoice Information PO# R1203316 Bill to
	Relinquished By: <u>Angie G. Spivey</u> Received By: <u>Janice Jaeger</u> 5/23/12 0845 Airbill Number:		
	Page		

Columbia Analytical Services
 1565 Jefferson Road
 Bldg 300, Suite 360
 Rochester, NY 14623

800.695.7222
 www.caslab.com

Client: **Casella/On-Site**
 4376 Manning Ridge Road
 Painted Post, NY 14870

Project Manager: **Joe Boyles/Jon Brandes**

CHAIN OF CUSTODY

Project: **Hakes C&D Landfill - Leachate**
 Tel phone No: 585-593-1824
 Fax No: 585-593-7471

Page 1 of 1
 Method of Shipment
 Velocity

Special Detection Limit / Reporting

PDF to Joe and On-Site.
 Hard copy and EDD to On-Site.

3670258

015
 016

Turn Around Time (working days)

10

Total: Gamma Spec (901.1), Ra-228 (903.1), Ra-228 (804.0)
 Total: Uranium (908.0)
 Dissolved: Gamma Spec (901.1), Ra-228 (903.1), Ra-228 (804.0)
 Dissolved: Uranium (908.0)

Lab Sample No. 8
 No. of Containers 8
 Matrix: Water, Soil, Air, Other, Yes, No
 Sampling Date: 5-24-12
 Sampling Time: 1230

Temperature received:
 Received by (Sign & Print Name): [Signature]
 Received by: [Signature]
 Received by laboratory: [Signature]

Date: 5-24-12 1430
 Date: 5/25/12 1030
 Date: []
 Date: []

Sample Received Intact: Yes No
 Relinquished by: Kevin Gye / Kevin Gye
 Relinquished by: []
 Relinquished by: []

Sample I.D.: **Dissolved**

Note: Dissolved analysis requires lab filtering

ice No ice

Lab Work No.

Columbia Analytical Services, Inc. Chain of Custody
 1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

CAS Contact: Janice Jaeger

3076058

Project Number: R1203316
 Project Manager: Janice Jaeger

Lab Code	Sample ID	# of Cont.	Matrix	Sample		Lab ID
				Date	Time	
R1203316-001	Leachate-0512	1	Water	5/23/12	1000	ACZ
R1203316-002	C11 Leach-0512	1	Water	5/23/12	1140	ACZ
R1203316-003	C2 Leach-0512	1	Water	5/23/12	1510	ACZ
R1203316-004	C3 Leach-0512	1	Water	5/23/12	1430	ACZ
R1203316-005	C4 Leach-0512	1	Water	5/23/12	1405	ACZ
R1203316-006	C5 Leach-0512	1	Water	5/23/12	1220	ACZ
R1203316-007	C6 Leach-0512	1	Water	5/23/12	1330	ACZ
R1203316-008	Leachate-0512 Dissolved	1	Water	5/23/12	1000	ACZ
R1203316-009	C11 Leach-0512 Dissolved	1	Water	5/23/12	1140	ACZ
R1203316-010	C2 Leach-0512 Dissolved	1	Water	5/23/12	1510	ACZ
R1203316-011	C3 Leach-0512 Dissolved	1	Water	5/23/12	1430	ACZ
R1203316-012	C4 Leach-0512 Dissolved	1	Water	5/23/12	1405	ACZ

Gamma Spec
 901.1

IV

Special Instructions/Comments	Turnaround Requirements RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 <input checked="" type="checkbox"/> STANDARD Requested FAX Date: _____ Requested Report Date: 06/07/12	Report Requirements <input type="checkbox"/> I. Results Only <input type="checkbox"/> II. Results + QC Summaries <input checked="" type="checkbox"/> III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data PQL/MDL/1 <u>N</u> EDD <u>Y</u>	Invoice Information PO# R1203316 Bill to _____
	Requisitioned By: <i>Angela [Signature]</i> 5/24/12	Received By: <i>[Signature]</i> 5/25/12 0845	Airbill Number: _____

Columbia Analytical Services, Inc. Chain of Custody

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CAS Contact: Janice Jaeger

Project Number: R1203316
Project Manager: Janice Jaeger

3670258

Lab Code	Sample ID	# of Cont.	Matrix	Sample		Lab ID
				Date	Time	
R1203316-013	C5Leach-0512 Dissolved 013	1	Water	5/23/12	1220	IV
R1203316-014	C6Leach-0512 Dissolved 014	1	Water	5/23/12	1330	

Gamma Spec
901.1

<p>Special Instructions/Comments</p>	<p>Turnaround Requirements</p> <p><input type="checkbox"/> RUSH (Surcharges Apply)</p> <p>PLEASE CIRCLE WORK DAYS</p> <p style="text-align: center;">1 2 3 4 5</p> <p><input checked="" type="checkbox"/> STANDARD</p> <p>Requested FAX Date: _____</p> <p>Requested Report Date: <u>06/07/12</u></p>	<p>Report Requirements</p> <p><input type="checkbox"/> I. Results Only</p> <p><input type="checkbox"/> II. Results + QC Summaries</p> <p><input type="checkbox"/> III. Results + QC and Calibration Summaries</p> <p><input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data</p> <p>PQL/MDL/3 <u> N </u></p> <p>EDD <u> Y </u></p>	<p>Invoice Information</p> <p>PO# R1203316</p> <p>Bill to _____</p>
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Relinquished By: Angy Lopez Received By: [Signature] 5/25/12 0845 Airbill Number: _____

Columbia Analytical Services, Inc. Chain of Custody

1565 Jefferson Rd. Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

CAS Contact: Janice Jaeger

Project Number: R1203316
 Project Manager: Janice Jaeger

3870058

Lab Code	Sample ID	# of Cont.	Matrix	Sample		Lab ID
				Date	Time	
R1203316-001	Leachate-0512	1	Water	5/23/12	1000	FGL Env.
R1203316-002	C11 Leach-0512		Water	5/23/12	1140	FGL Env.
R1203316-003	C2 Leach-0512		Water	5/23/12	1510	FGL Env.
R1203316-004	C3 Leach-0512		Water	5/23/12	1430	FGL Env.
R1203316-005	C4 Leach-0512		Water	5/23/12	1405	FGL Env.
R1203316-006	C5 Leach-0512		Water	5/23/12	1220	FGL Env.
R1203316-007	C6 Leach-0512		Water	5/23/12	1330	FGL Env.
R1203316-008	Leachate-0512 Dissolved		Water	5/23/12	1000	FGL Env.
R1203316-009	C11 Leach-0512 Dissolved		Water	5/23/12	1140	FGL Env.
R1203316-010	C2 Leach-0512 Dissolved		Water	5/23/12	1510	FGL Env.
R1203316-011	C3 Leach-0512 Dissolved		Water	5/23/12	1430	FGL Env.
R1203316-012	C4 Leach-0512 Dissolved		Water	5/23/12	1405	FGL Env.

NAT C 908

IV

Special Instructions/Comments 	Turnaround Requirements RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 <input checked="" type="checkbox"/> STANDARD Requested FAX Date: _____ Requested Report Date: 06/07/12	Report Requirements <input type="checkbox"/> I. Results Only <input type="checkbox"/> II. Results + QC Summaries <input type="checkbox"/> III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data POLMDL/J N EDD Y	Invoice Information PO# R1203316 Bill to
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Relinquished By: Sherry Goff 5/24/12 Received By: [Signature] 5/23/12 0845 Airbill Number: _____



Sample Condition Upon Receipt

Client Name: ALS

Project # 307058

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1Z17W4381347980380, 1Z17W4381348665600, 1Z17W4381347341186

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 5 6 7 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature NA Biological Tissue is Frozen: Yes No Date and initials of person examining contents: ALS-25-10

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1. <u>34 COCs present</u>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>see attached</u>
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <u>#3 - 6ml #11 - 9ml #5 - 15ml #15 - 3ml #7 - 15ml</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<u>1130 5-25-10 5-25-10 PNC</u>
exceptions: VOA, colform, TOC, O&G, W-DR0 (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed: <u>[Signature]</u> Lot # of added preservative: <u>P17-0012-1</u>
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ Field Data Required? Y / N

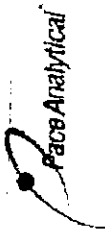
Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Carro Ferris

Date: 5/25/10

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)



Project Number: 3070258

Client Name: ALS-COLUMBIA

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil Kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipes smear/ filter	Radchem Nitrgene (125 / 250 / 500 / 1L)	Radchem Nitrgene (1/2 gal / 1 gal)	Cubliner (500 ml / 4L)	Zptic	Other	Other	
001	WT																								
002				H																H					
003				H																H					
004				H																H					
005				H																H					
006				H																H					
007				H																H					
008				H																H					
009				H																H					
010				H																H					
011				H																H					
012				H																H					

SCURF Beck (C016-4 15May2012).xls

013
014
015
3
7

4 (Samples received separately)