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Denver, CO 80202
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January 9, 2012

Mr. Carlos Lujan, Ph.D.
State of Colorado
Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

RE: Final Pit Closure Report
Brownlee 13-9 Location
REM No. 6128, DOC No. 2215972

Dear Mr. Lujan:

The following includes a summary of work completed to date/Final Closure Report (Report) for the residual drilling materials pit on the Brownlee 13-9 well location (Brownlee 13-9). This Report is submitted on behalf of Entek GRB, LLC (Entek) in partial fulfillment of the requirements set forth in the approved workplan for the Brownlee 13-9 pit closure dated 9/9/11.

Background

Brownlee 13-9 is located on private land in Section 13, Township 12 North, Range 89 West, Moffat County, Colorado. The Brownlee 13-9 location has been assigned Location ID No. 313232 (Pit ID No. 289418).

On September 9, 2011, a Form 27 Site Investigation and Remediation Workplan (Workplan) was submitted to COGCC for closure of the unlined pit at the Brownlee 13-9 well location. The Workplan included: a proposed remediation strategy for the pit; a photograph and aerial image of the pit; a schematic illustrating the pit dimensions and initial TPH sample location. COGCC completed its review of the submitted documents on or about September 16th. For reference, a copy of the Workplan is included as Attachment A.

Remediation Activity Plan

As part of the initial investigation activities, a sample of the residual material was collected and tested for total petroleum hydrocarbons (TPH). Figure 2 of the Workplan (attached) illustrates the sample location. The laboratory analysis results indicate concentrations of greater than 500 mg/kg of TPH in the residual materials. Accordingly, a proposed remediation strategy was developed that included:

- Removing the residual drilling material from one side of the pit ("excavation side") and placing this material in the other side of the pit ("stockpile side");
- Mixing the residual drilling material with clean soil as it's placed in the stockpile side;
- Visually inspecting the excavation side and mixed material stockpile for evidence of oil staining and collecting discrete samples from the base and sidewalls of the excavation side of the pit; composite samples from the residual material/clean soil mixture in the stockpile side of the pit; and background samples from locations adjacent to the pit;
- Performing laboratory analysis of the discrete, composite and background samples for Table 910-1 parameters and review results;
- If discrete and composite sample results are at or below Table 910-1 parameters and/or otherwise acceptable, placing and compacting the stockpiled materials in the excavation side of the pit;
- Visually inspect the newly excavated side of the pit for evidence of oil staining and collecting discrete samples from the base and sidewalls of this side of the pit;
- Perform laboratory analysis of the discrete samples for Table 910-1 parameters and review results;
- If discrete sample results are at or below Table 910-1 parameters and/or otherwise acceptable, place and compact the stockpiled materials in the remaining side of the pit;
- If discrete sample results are above Table 910-1 parameters and/or otherwise unacceptable, continue excavating soil from areas of the pit where Table 910-1 parameters were above acceptable concentrations and resample for only the parameters that were above acceptable concentrations;
- If pH, SAR, EC levels and arsenic concentrations of the discrete and composite samples are at or below background concentrations, fill the remaining freeboard of the pit (2' minimum) with clean soil and grade the surface to achieve positive drainage;
- If pH, SAR, EC levels and arsenic concentrations of the discrete and composite samples are at or above background concentrations, fill the remaining freeboard of the pit (3' minimum) with clean soil and grade the surface to achieve positive drainage; and
- Once activity at the well location has ceased, revegetate the ground surface in accordance with the Entek NE Sand Wash Basin Storm Water Management Plan requirements.

Remediation Activity Results

On October 22, 2011, four discrete soil samples (2 base, 2 sidewall) were collected from the excavation side of the pit and three composite samples were collected from the residual drilling material/clean soil mixture in the stockpile side of the pit. In addition two background samples were collected from undisturbed areas adjacent to the pit. On November 15th, four discrete soil samples (2 base, 2 sidewall) were collected from the second excavation side of the pit. Figure 1 illustrates the excavation and stockpile sides of the pit and includes photographs of each excavation side prior to sampling and the final filled condition. Figure 2 illustrates the discrete sample locations (excavated sides), composite samples (stockpile side) and background sample locations.

Mr. Carlos Lujan, Ph.D.

Page 3

The discrete soil samples and composite residual drilling material/clean soil mixture samples and were analyzed for COGCC Table 910-1 parameters. These parameters include the following: total metals; BTEX (benzene, toluene, ethylbenzene, and total xylenes); select semi-volatile organics; total petroleum hydrocarbons (TPH) both volatile (TVPH) and extractable (TEPH); SAR (sodium absorption ratio); EC (electrical conductivity); and pH. Background soil samples were analyzed for total Ar, SAR, EC, and pH.

Results of the sampling program are included as Attachment B of this Report and summarized in the following tables:

- Table 1A (Discrete Soil Samples - Excavation Side 1);
- Table 1B (Composite Residual Drilling Material/Clean Soil Mixture);
- Table 1C (Background Soil Samples); and
- Table 2A (Discrete Soil Samples - Excavation Side 2).

As shown in the above-listed tables, all parameters included in the analysis were below COGCC limits with the exception of arsenic and SAR.

Arsenic concentrations ranged from 5.13 mg/kg to 7.22 mg/kg in the excavation side 1 samples (Table 1A), 0.56 mg/kg to 9.90 mg/kg in the stockpile samples (Table 1B), and 3.20 mg/kg to 6.39 mg/kg in the excavation side 2 samples (Table 2A). Background arsenic concentrations were 0.43 mg/kg in both samples A and B.

SAR levels were generally acceptable but composite sample B (Table 1B) and excavation side 2 sidewall sample 1 (Table 2A) were 20.6 and 20.5, respectively. Due to the elevated concentrations/levels of arsenic and SAR, the residual material/clean soil mixture was covered with 3' of clean fill and graded to drain.

Closure of the Brownlee 13-9 was completed on or about December 1, 2011. Once activity at the well location has ceased, the ground surface will be roughened and broadcast seeded in accordance with the revegetation procedures included in the Entek Storm Water Management Plan (SWMP) for its Northeast Sand Wash Basin Development Field. As described in the SWMP, well location restoration and revegetation shall be conducted in a manner consistent with BLM Best Management Practices for Noxious and Invasive Weed Prevention and the SWMP.

We trust that this Closure Report is acceptable and complete. Please contact me should you have any questions or require additional information.

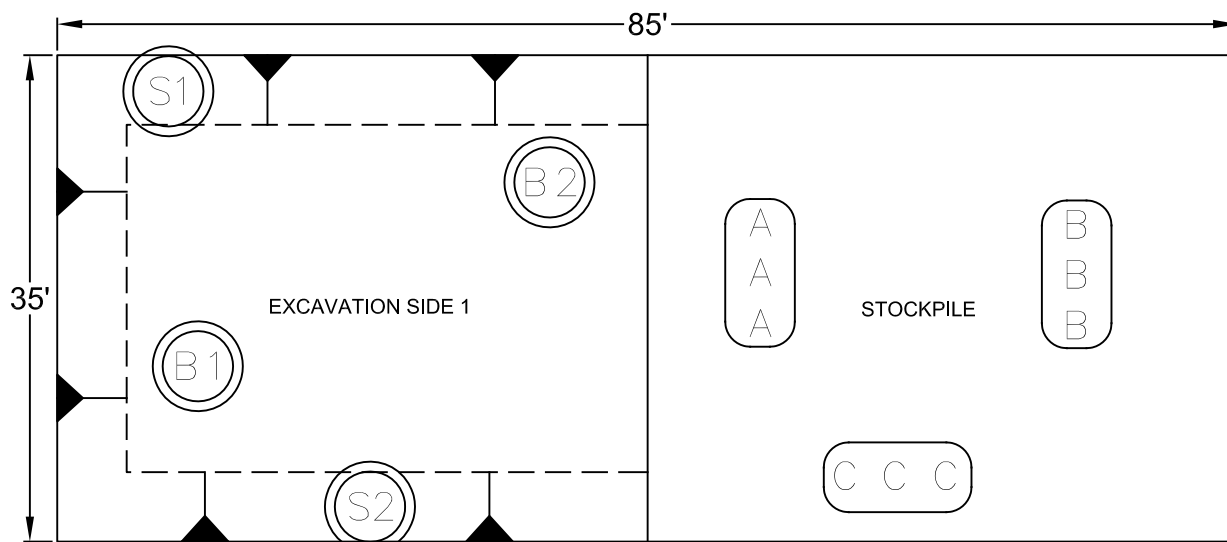
Sincerely,
ENERTIA CONSULTING GROUP, LLC



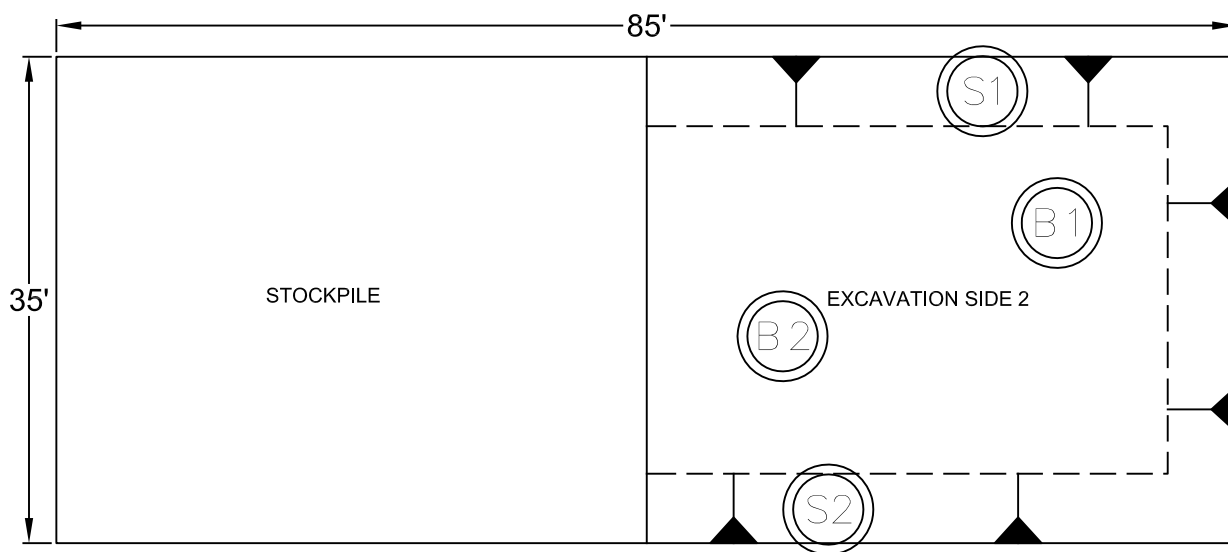
J. Sean O'Hearn, P.E., P.G.
Managing Partner



FIGURE 1
ENTEK GRB
BROWNLEE 13-9 PIT
SLATER DOME FIELD
DECEMBER 19, 2011



EXCAVATION SIDE 1 AND STOCKPILE SIDE SAMPLE LOCATIONS
SAMPLE DATE 10-22-11



EXCAVATION SIDE 2 SAMPLE LOCATIONS
SAMPLE DATE 11-15-11

LEGEND




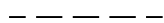
-  PIT SAMPLE LOCATION (DISCRETE)
-  RESIDUAL MATERIAL SAMPLE LOCATION (COMPOSITE)
-  BACKGROUND SAMPLE LOCATION
-  RESIDUAL MATERIAL PERIMETER

FIGURE 2
BROWNLEE 13-9
SLATER DOME FIELD
DECEMBER 20, 2011

Table 1A - Brownlee 13-9 Discrete Soil Samples - Excavation Side 1
Sample Date - October 22, 2011

Contaminant of Concern	COGCC Limit	Sidewall 1	Sidewall 2	Base 1	Base 2
Organic Compounds					
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	ND	ND	ND	ND
Benzene	0.17 mg/kg	ND	ND	ND	ND
Toluene	85 mg/kg	0.017 mg/kg	0.033 mg/kg	ND	0.008 mg/kg
Ethylbenzene	100 mg/kg	ND	ND	ND	ND
Xylenes (total)	175 mg/kg	ND	0.01 mg/kg	ND	ND
Acenaphthene	1,000 mg/kg	ND	ND	ND	ND
Anthracene	1,000 mg/kg	ND	ND	ND	ND
Benzo(A)anthracene	0.22 mg/kg	ND	ND	ND	0.006 mg/kg
Benzo(B)fluoranthene	0.22 mg/kg	ND	ND	ND	ND
Benzo(K)fluoranthene	2.2 mg/kg	ND	ND	ND	ND
Benzo(A)pyrene	0.022 mg/kg	ND	ND	ND	ND
Chrysene	22 mg/kg	ND	ND	ND	0.006 mg/kg
Dibenzo(A,H)anthracene	0.022 mg/kg	ND	ND	ND	ND
Fluoranthene	1,000 mg/kg	ND	ND	ND	ND
Fluorene	1,000 mg/kg	ND	ND	ND	ND
Indeno(1,2,3,C,D)pyrene	0.22 mg/kg	ND	ND	ND	ND
Napthalene	23 mg/kg	ND	ND	ND	ND
Pyrene	1,000 mg/kg	ND	ND	ND	0.006 mg/kg
Other Parameters					
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	2.13	1.18	1.95	1.98
Sodium Adsorption Ratio (SAR)	<12	1.67	0.7	7.65	4.08
pH	6 to 9	7.1	7.7	8	7.5

Table 1A (Cont'd) - Brownlee 13-9 Discrete Soil Samples - Excavation Side 1
Sample Date - October 22, 2011

Contaminant of Concern	COGCC Limit	Sidewall 1	Sidewall 2	Base 1	Base 2
Elements/Metals					
Arsenic	0.39 mg/kg	5.13 mg/kg	7.22 mg/kg	5.78 mg/kg	6.01 mg/kg
Barium (LDNR True Total Barium)	15,000 mg/kg	128 mg/kg	172 mg/kg	173	153 mg/kg
Boron (Hot Water Soluble)	2 mg/l	NTF	NTF	NTF	NTF
Cadmium	70 mg/kg	0.874 mg/kg	2.57 mg/kg	0.52 mg/kg	0.764 mg/kg
Chromium (total)	120,000 mg/kg	14.8 mg/kg	15.9 mg/kg	13.0 mg/kg	13.1 mg/kg
Chromium (VI)	23 mg/kg	0.8 mg/kg	0.76 mg/kg	1.1 mg/kg	0.66 mg/kg
Copper	3,100 mg/kg	13.6 mg/kg	17.0 mg/kg	13.8 mg/kg	14.1 mg/kg
Lead (inorganic)	400 mg/kg	11.3 mg/kg	15.8 mg/kg	16.3 mg/kg	10.6 mg/kg
Mercury	23 mg/kg	0.111 mg/kg	0.082 mg/kg	0.102 mg/kg	0.067 mg/kg
Nickel (soluble salts)	1,600 mg/kg	21.8 mg/kg	51.7 mg/kg	12.9 mg/kg	19.3 mg/kg
Selenium	390 mg/kg	1.42 mg/kg	1.38 mg/kg	1.93 mg/kg	1.39 mg/kg
Silver	390 mg/kg	0.113 mg/kg	0.147 mg/kg	0.148 mg/kg	0.107 mg/kg
Zinc	23,000 mg/kg	64.2 mg/kg	213 mg/kg	48.8 mg/kg	75.7 mg/kg

Table 1B - Brownlee 13-9 Composite Fill Material Samples
Sample Date - October 22, 2011

Contaminant of Concern	COGCC Limit	Composite A	Composite B	Composite C
Organic Compounds				
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	ND	ND	ND
Benzene	0.17 mg/kg	ND	ND	ND
Toluene	85 mg/kg	ND	0.016 mg/kg	ND
Ethylbenzene	100 mg/kg	ND	ND	ND
Xylenes (total)	175 mg/kg	ND	ND	ND
Acenaphthene	1,000 mg/kg	ND	ND	ND
Anthracene	1,000 mg/kg	0.008 mg/kg	ND	0.016 mg/kg
Benzo(A)anthracene	0.22 mg/kg	0.007 mg/kg	0.011 mg/kg	0.021 mg/kg
Benzo(B)fluoranthene	0.22 mg/kg	ND	0.007 mg/kg	0.010 mg/kg
Benzo(K)fluoranthene	2.2 mg/kg	ND	ND	ND
Benzo(A)pyrene	0.022 mg/kg	ND	ND	ND
Chrysene	22 mg/kg	0.008 mg/kg	0.011 mg/kg	0.022 mg/kg
Dibenzo(A,H)anthracene	0.022 mg/kg	ND	ND	ND
Fluoranthene	1,000 mg/kg	ND	ND	0.005 mg/kg
Fluorene	1,000 mg/kg	ND	ND	0.007 mg/kg
Indeno(1,2,3,C,D)pyrene	0.22 mg/kg	ND	ND	ND
Napthalene	23 mg/kg	0.009 mg/kg	ND	0.024 mg/kg
Pyrene	1,000 mg/kg	0.012 mg/kg	ND	0.028 mg/kg
Other Parameters				
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	1.66	1.13	1.77
Sodium Adsorption Ratio (SAR)	<12	4.92	20.6	2.58
pH	6 to 9	7.8	6.9	7.2

Table 1B (Cont'd) - Brownlee 13-9 Composite Fill Material Samples**Sample Date - October 22, 2011**

Contaminant of Concern	COGCC Limit	Composite A	Composite B	Composite C
Elements/Metals				
Arsenic	0.39 mg/kg	9.90 mg/kg	6.42 mg/kg	0.599 mg/kg
Barium (LDNR True Total Barium)	15,000 mg/kg	239 mg/kg	91.7 mg/kg	174 mg/kg
Boron (Hot Water Soluble)	2 mg/l	NTF	NTF	NTF
Cadmium	70 mg/kg	0.928 mg/kg	1.21 mg/kg	0.755 mg/kg
Chromium (total)	120,000 mg/kg	10.9 mg/kg	23.8 mg/kg	15.4 mg/kg
Chromium (VI)	23 mg/kg	0.48 mg/kg	1.1 mg/kg	1.1 mg/kg
Copper	3,100 mg/kg	15.0 mg/kg	20.6 mg/kg	14.6 mg/kg
Lead (inorganic)	400 mg/kg	11.3 mg/kg	18.1 mg/kg	1.54 mg/kg
Mercury	23 mg/kg	0.067 mg/kg	0.173 mg/kg	0.084 mg/kg
Nickel (soluble salts)	1,600 mg/kg	38.0 mg/kg	26.5 mg/kg	21.2 mg/kg
Selenium	390 mg/kg	1.34 mg/kg	2.69 mg/kg	1.48 mg/kg
Silver	390 mg/kg	ND	0.169 mg/kg	0.106 mg/kg
Zinc	23,000 mg/kg	78.4 mg/kg	34.6 mg/kg	69.3 mg/kg

Table 1C - Brownlee 13-9 Background Soil Samples**Sample Date - October 22, 2011**

Contaminant of Concern	COGCC Limit	Back-1	Back-2	
Tested Parameters				
Arsenic (total)	0.39 mg/kg	0.425 mg/kg	0.45 mg/kg	
Sodium Adsorption Ratio (SAR)	<12	0.07	0.05	
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	0.265	0.106	
pH	6 to 9	8.4	8.2	

Table 2A - Brownlee 13-9 Discrete Soil Samples - Excavation Side 2
Sample Date - November 15, 2011

Contaminant of Concern	COGCC Limit	Sidewall 1	Sidewall 2	Base 1	Base 2
Organic Compounds					
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	ND	420 mg/kg	ND	ND
Benzene	0.17 mg/kg	ND	ND	ND	ND
Toluene	85 mg/kg	ND	ND	ND	ND
Ethylbenzene	100 mg/kg	ND	ND	ND	ND
Xylenes (total)	175 mg/kg	ND	ND	ND	ND
Acenaphthene	1,000 mg/kg	ND	ND	ND	ND
Anthracene	1,000 mg/kg	ND	ND	ND	ND
Benzo(A)anthracene	0.22 mg/kg	ND	ND	ND	ND
Benzo(B)fluoranthene	0.22 mg/kg	ND	0.010 mg/kg	ND	ND
Benzo(K)fluoranthene	2.2 mg/kg	ND	ND	ND	ND
Benzo(A)pyrene	0.022 mg/kg	ND	ND	ND	ND
Chrysene	22 mg/kg	0.005 mg/kg	0.027 mg/kg	ND	ND
Dibenzo(A,H)anthracene	0.022 mg/kg	ND	ND	ND	ND
Fluoranthene	1,000 mg/kg	ND	ND	ND	ND
Fluorene	1,000 mg/kg	ND	ND	ND	ND
Indeno(1,2,3,C,D)pyrene	0.22 mg/kg	ND	ND	ND	ND
Napthalene	23 mg/kg	ND	ND	ND	ND
Pyrene	1,000 mg/kg	ND	0.035 mg/kg	ND	ND
Other Parameters					
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	1	2.09	1.92	0.56
Sodium Adsorption Ratio (SAR)	<12	20.5	7.51	3.21	2.37
pH	6 to 9	8	7.8	6.6	6.4

Table 2A (Cont'd) - Brownlee 13-9 Discrete Soil Samples - Excavation Side 2
Sample Date - November 15, 2011

Contaminant of Concern	COGCC Limit	Sidewall 1	Sidewall 2	Base 1	Base 2
Elements/Metals					
Arsenic	0.39 mg/kg	3.2 mg/kg	4.18 mg/kg	6.39 mg/kg	6.13 mg/kg
Barium (LDNR True Total Barium)	15,000 mg/kg	163 mg/kg	277 mg/kg	159 mg/kg	125 mg/kg
Boron (Hot Water Soluble)	2 mg/l	NTF	NTF	NTF	NTF
Cadmium	70 mg/kg	0.545 mg/kg	0.523 mg/kg	0.815 mg/kg	0.41 mg/kg
Chromium (total)	120,000 mg/kg	0.545 mg/kg	0.522 mg/kg	0.815 mg/kg	0.41 mg/kg
Chromium (VI)	23 mg/kg	ND	0.8 mg/kg	ND	0.87 mg/kg
Copper	3,100 mg/kg	13.8 mg/kg	10.8 mg/kg	14.6 mg/kg	12.7 mg/kg
Lead (inorganic)	400 mg/kg	16.4 mg/kg	12.6 mg/kg	20.8 mg/kg	12.8 mg/kg
Mercury	23 mg/kg	0.052 mg/kg	ND	0.136 mg/kg	0.055 mg/kg
Nickel (soluble salts)	1,600 mg/kg	6.15 mg/kg	12.6 mg/kg	16.3 mg/kg	6.38 mg/kg
Selenium	390 mg/kg	1.16 mg/kg	0.551 mg/kg	1.18 mg/kg	1.47 mg/kg
Silver	390 mg/kg	0.13 mg/kg	ND	0.144 mg/kg	0.115 mg/kg
Zinc	23,000 mg/kg	19.1 mg/kg	45.4 mg/kg	53.8 mg/kg	31.1 mg/kg

ATTACHMENT A

**SITE INVESTIGATION AND REMEDIATION WORKPLAN
RESIDUAL DRILLING MATERIALS PIT
BROWNLEE 13-9 – LOCATION ID No. 313232**

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe): Pit Closure

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10323

Name of Operator: Entek GRB, LLC

Address: 535 16th Street, Suite 620

City: Denver State: CO Zip: 80202

Contact Name and Telephone:

Kristen Stocks

No: (307) 200-1930

Fax: (866) 435-9424

API Number: 05-081-07231

County: Moffatt

Facility Name: Slater Dome

Facility Number: 77551

Well Name: Brownlee

Well Number: 13-9

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NESE 13, 12N, 89W, 6th Latitude: 40.992714 Longitude: -107.32093

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Drilling fluid with crude oil

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): undeveloped rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan:

Potential receptors (water wells within 1/4 mi, surface waters, etc.): none

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

- ☒ Soils
☐ Vegetation
☐ Groundwater
☐ Surface Water

Extent of Impact:

residual drilling materials contained within unlined pit

How Determined:

visual observation and drilling materials sample taken

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Residual drilling fluid materials are present in the unlined pit located on the Brownlee 13-9 well pad (see Figure 1 for approximate pit location). A sample of the residual material has been obtained and tested for total petroleum hydrocarbons (TPH). Figure 2 illustrates the sample location. The sample analysis results indicate concentrations of greater than 500 mg/kg of TPH exist in the residual materials. Accordingly, the proposed initial action will be to uniformly mix the residual drilling materials with clean fill obtained from on-site borrow sources; to reduce TPH concentrations and other Table 910-1 parameter concentrations to acceptable levels and use the mixed material to backfill the pit.

Describe how source is to be removed:

To minimize the impact of the TPH contaminated material on areas adjacent to the Brownlee 13-9 pit, an earthen berm, constructed of clean, compactable fill material will be installed at, or near the midpoint of the pit. Once the earthen berm is in place, the residual drilling material from one side of the pit (excavation side) will be excavated and placed in the other side of the pit (stockpile side). Once in the stockpile side of the pit, all residual drilling materials will be uniformly mixed with clean soils.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Once the residual material has been removed from the excavation side, the excavation side bottom and sidewalls will be visually inspected for oil staining. Any visually identified oil stained materials will be excavated, placed in the stockpile side and mixed with clean soil. Confirmatory soil samples (discrete) will be collected from 2 locations in the excavation side and sampled for Table 910-1 parameters. In addition, 2 confirmatory soil samples (composite) of the uniformly mixed material located in the stockpile side will be sampled for Table 910-1 parameters. If all sample results are at or below Table 910-1 soil standards, stockpiled material will be excavated, placed and compacted in the excavation side. Once all material has been removed from the stockpile side, confirmatory soil samples (discrete) will be collected from 2 locations in the pit bottom and sampled for Table 910-1 parameters. If all sample results are at or below Table 910-1 soil standards, the stockpile side will be backfilled.

Submit Page 2 with Page 1



REMEDIATION WORKPLAN (Cont.)

Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Depth to groundwater in the vicinity of the Brownlee 13-9 pit location is reported to be greater than 400'. Accordingly, it is unlikely that groundwater has been impacted by the residual drilling materials.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Once the pit has been backfilled with the mixed residual drilling material/clean fill, clean fill only will be placed in the upper two feet of the pit and the surface elevation of the backfilled pit will be shaped and graded to match the existing grade around the perimeter of the pit. Once activity at the well location has ceased, the surface will be roughened and broadcast seeded in accordance with revegetation procedures included in the Entek Storm Water Management Plan (SWMP). Well location restoration and revegetation shall be conducted in a manner consistent with BLM Best Management Practices for Noxious and Invasive Weed Prevention and the SWMP.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☐ Y ☒ N If yes, describe:

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Mixed with site soils and used to backfill pit up to 2' below ground surface. Remaining 2' to be backfilled with clean fill only.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 8/1 Date Site Investigation Completed: 8/31 Date Remediation Plan Submitted: 9/9
Remediation Start Date: 9/14 Anticipated Completion Date: 10/15 Actual Completion Date: _____

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Tim Hopkins

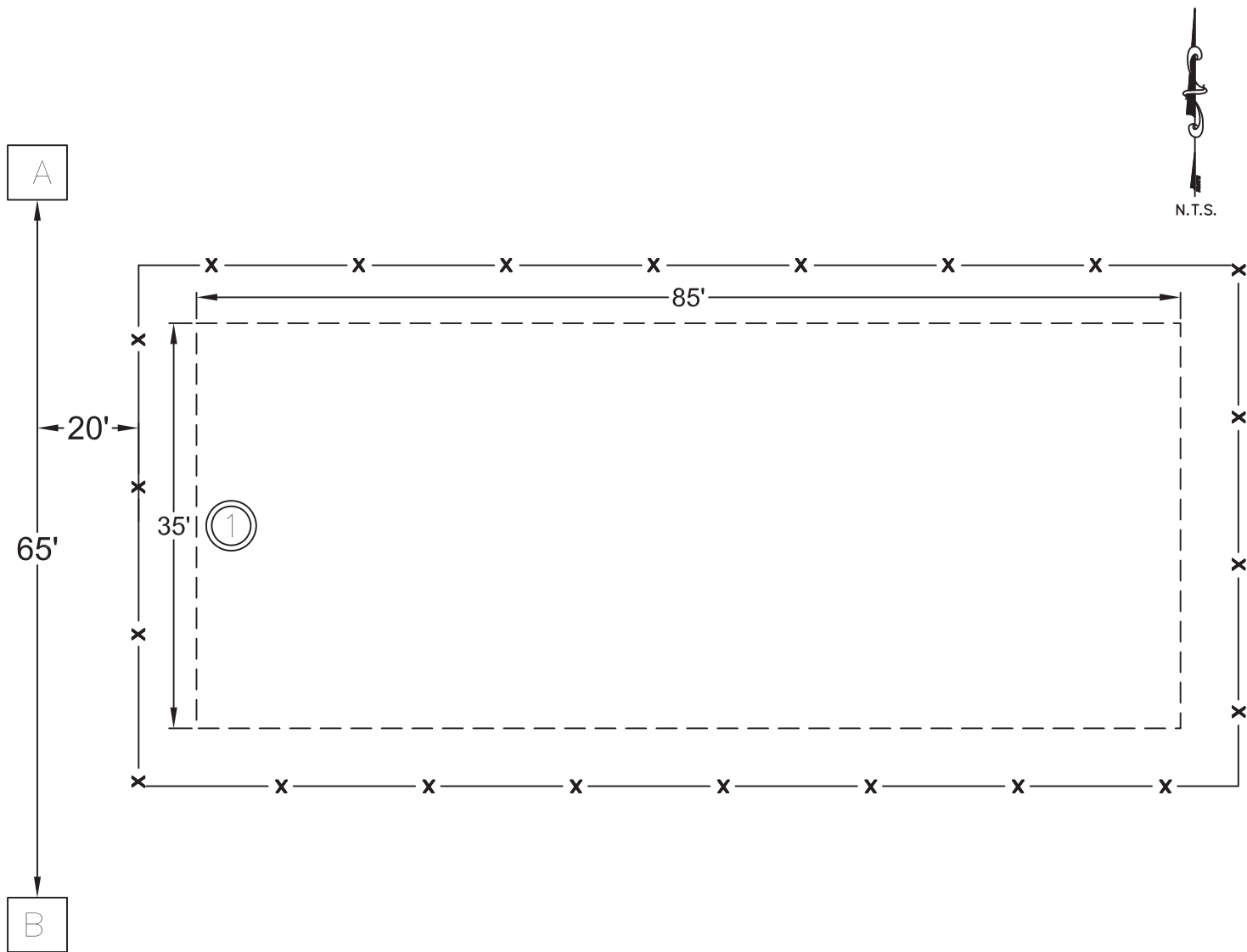
Signed: 

Title: Regional Manager

Date: 9/9/11

OGCC Approved: _____ Title: _____ Date: _____





LEGEND





-  PIT SAMPLE LOCATION
-  BACKGROUND SAMPLE LOCATION (TPH ONLY)
-  PIT PERIMETER
-  FENCE

FIGURE 2
 BROWNLEE 13-9
 SLATER DOME FIELD
 SEPTEMBER 9, 2011

ATTACHMENT B

**ANALYTICAL RESULTS
RESIDUAL DRILLING MATERIALS PIT
BROWNLEE 13-9 – LOCATION ID No. 313232**

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

November 04, 2011

Kristen Stocks
Entek GRB LLC
535 16th Street Suite 620
Denver, CO 80202
RE: Brownlee Pit 13-9

Enclosed are the results of analyses for samples received by Summit Scientific on 10/24/11 11:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sidewall 1	R110145-01	Soil	10/22/11 10:30	10/24/11 11:45
Sidewall 2	R110145-02	Soil	10/22/11 10:30	10/24/11 11:45
Base 1	R110145-03	Soil	10/22/11 10:30	10/24/11 11:45
Base 2	R110145-04	Soil	10/22/11 10:30	10/24/11 11:45
Composite A	R110145-05	Soil	10/22/11 10:30	10/24/11 11:45
Composite B	R110145-06	Soil	10/22/11 10:30	10/24/11 11:45
Composite C	R110145-07	Soil	10/22/11 10:30	10/24/11 11:45
Location 1	R110145-08	Soil	10/22/11 10:30	10/24/11 11:45
Location 2	R110145-09	Soil	10/22/11 10:30	10/24/11 11:45

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Sidewall 1
R110145-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1102411	10/24/11	10/24/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1102410	10/24/11	10/26/11	EPA 8260B	
Toluene	0.017	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		102 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	78.4-125		"	"	"	"	

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535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Sidewall 1
R110145-01 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1102611	10/26/11	10/28/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		114 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		103 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		102 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		104 %	41.7-139		"	"	"	"	

Calculated Analytes

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535 16th Street Suite 620
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Sidewall 1
R110145-01 (Soil)

Summit Scientific

Calculated Analytes

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	14.0	0.440	mg/kg	1	110404	10/28/11	11/04/11	Calculation	

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.13	0.744	mg/kg	10	1102507	10/26/11	10/27/11	EPA 6020A	
Barium	128	37.2	"	"	"	"	"	"	
Cadmium	0.874	0.0744	"	1	"	"	"	"	
Chromium	14.8	0.744	"	10	"	"	"	"	
Copper	13.6	3.72	"	"	"	"	"	"	
Lead	11.3	0.372	"	1	"	"	"	"	
Nickel	21.8	3.72	"	10	"	"	"	"	
Selenium	1.42	0.0744	"	1	"	"	"	"	
Silver	0.113	0.0744	"	"	"	"	"	"	
Zinc	64.2	37.2	"	10	"	"	"	"	

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.111	0.0500	mg/kg	1	1102604	10/26/11	10/28/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Sidewall 1
R110145-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance (EC)	2.13	0.00100 mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B
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Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.1		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	0.8	0.44	mg/kg	1	1110404	10/28/11	11/04/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1660	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	473	1.00	"	"	"	"	"	"	
Sodium	296	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.67		units	"	1103002	10/30/11	10/30/11	"	

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Sidewall 2
R110145-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1102411	10/24/11	10/25/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.9 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1102410	10/24/11	10/26/11	EPA 8260B	
Toluene	0.033	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.010	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.2 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	78.4-125		"	"	"	"	

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535 16th Street Suite 620
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Sidewall 2
R110145-02 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1102611	10/26/11	10/28/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		107 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		97.9 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		87.2 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		101 %	41.7-139		"	"	"	"	

Calculated Analytes

Summit Scientific

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535 16th Street Suite 620
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Sidewall 2
R110145-02 (Soil)

Summit Scientific

Calculated Analytes

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	15.1	0.450	mg/kg	1	110404	10/28/11	11/04/11	Calculation	

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.22	0.831	mg/kg	10	1102507	10/26/11	10/27/11	EPA 6020A	
Barium	172	41.6	"	"	"	"	"	"	
Cadmium	2.57	0.0831	"	1	"	"	"	"	
Chromium	15.9	0.831	"	10	"	"	"	"	
Copper	17.0	4.16	"	"	"	"	"	"	
Lead	15.8	4.16	"	"	"	"	"	"	
Nickel	51.7	4.16	"	"	"	"	"	"	
Selenium	1.38	0.0831	"	1	"	"	"	"	
Silver	0.147	0.0831	"	"	"	"	"	"	
Zinc	213	41.6	"	10	"	"	"	"	

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.0824	0.0500	mg/kg	1	1102604	10/26/11	10/28/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Entek GRB LLC
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Sidewall 2
R110145-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance (EC)	1.18	0.00100 mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B
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Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.7		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	0.76	0.45	mg/kg	1	1110404	10/28/11	11/04/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1200	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	256	1.00	"	"	"	"	"	"	
Sodium	102	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.700		units	"	1103002	10/30/11	10/30/11	"	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Base 1
R110145-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1102411	10/24/11	10/25/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1102410	10/24/11	10/26/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.2 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	78.4-125		"	"	"	"	

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Base 1
R110145-03 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1102611	10/26/11	10/28/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		109 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		108 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		113 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		104 %	41.7-139		"	"	"	"	

Calculated Analytes

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Base 1
R110145-03 (Soil)

Summit Scientific

Calculated Analytes

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	11.9	0.450	mg/kg	1	1110404	10/28/11	11/04/11	Calculation	

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.78	0.839	mg/kg	10	1102507	10/26/11	10/27/11	EPA 6020A	
Barium	173	42.0	"	"	"	"	"	"	
Cadmium	0.520	0.0839	"	1	"	"	"	"	
Chromium	13.0	0.839	"	10	"	"	"	"	
Copper	13.8	4.20	"	"	"	"	"	"	
Lead	16.3	4.20	"	"	"	"	"	"	
Nickel	12.9	4.20	"	"	"	"	"	"	
Selenium	1.93	0.0839	"	1	"	"	"	"	
Silver	0.148	0.0839	"	"	"	"	"	"	
Zinc	48.8	42.0	"	10	"	"	"	"	

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.102	0.0500	mg/kg	1	1102604	10/26/11	10/28/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Base 1
R110145-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance (EC)	1.95	0.00100 mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B
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Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.0		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	1.1	0.45	mg/kg	1	1110404	10/28/11	11/04/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	673	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	125	1.00	"	"	"	"	"	"	
Sodium	824	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.65		units	"	1103002	10/30/11	10/30/11	"	

Summit Scientific

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535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Base 2
R110145-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1102411	10/24/11	10/25/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1102410	10/24/11	10/26/11	EPA 8260B	
Toluene	0.0075	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.0 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		100 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	78.4-125		"	"	"	"	

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535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Base 2
R110145-04 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1102611	10/26/11	10/28/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	5.94	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	6.16	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Pyrene	5.63	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		109 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		107 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		112 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		103 %	41.7-139		"	"	"	"	

Calculated Analytes

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Base 2
R110145-04 (Soil)

Summit Scientific

Calculated Analytes

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	12.4	0.450	mg/kg	1	110404	10/28/11	11/04/11	Calculation	

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.01	0.674	mg/kg	10	1102507	10/26/11	10/27/11	EPA 6020A	
Barium	153	33.7	"	"	"	"	"	"	
Cadmium	0.764	0.0674	"	1	"	"	"	"	
Chromium	13.1	0.674	"	10	"	"	"	"	
Copper	14.1	3.37	"	"	"	"	"	"	
Lead	10.6	0.337	"	1	"	"	"	"	
Nickel	19.3	3.37	"	10	"	"	"	"	
Selenium	1.39	0.0674	"	1	"	"	"	"	
Silver	0.107	0.0674	"	"	"	"	"	"	
Zinc	75.7	33.7	"	10	"	"	"	"	

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.0667	0.0500	mg/kg	1	1102604	10/26/11	10/28/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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535 16th Street Suite 620
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Base 2
R110145-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance (EC)	1.98	0.00100 mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B
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Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.5		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	0.66	0.45	mg/kg	1	1110404	10/28/11	11/04/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	862	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	296	1.00	"	"	"	"	"	"	
Sodium	545	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.08		units	"	1103002	10/30/11	10/30/11	"	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite A
R110145-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1102411	10/24/11	10/25/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1102410	10/24/11	10/26/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.4 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	78.4-125		"	"	"	"	

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535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite A
R110145-05 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1102611	10/26/11	10/28/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	8.30	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	7.49	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	7.77	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	9.24	5.00	"	"	"	"	"	"	
Phenanthrene	8.33	5.00	"	"	"	"	"	"	
Pyrene	11.8	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		91.8 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		108 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		106 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		104 %	41.7-139		"	"	"	"	

Calculated Analytes

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite A
R110145-05 (Soil)

Summit Scientific

Calculated Analytes

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	10.4	0.460	mg/kg	1	1110404	10/28/11	11/04/11	Calculation	

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	9.90	0.807	mg/kg	10	1102507	10/26/11	10/27/11	EPA 6020A	
Barium	239	40.3	"	"	"	"	"	"	
Cadmium	0.928	0.0807	"	1	"	"	"	"	
Chromium	10.9	0.807	"	10	"	"	"	"	
Copper	15.0	4.03	"	"	"	"	"	"	
Lead	11.3	4.03	"	"	"	"	"	"	
Nickel	38.0	4.03	"	"	"	"	"	"	
Selenium	1.34	0.0807	"	1	"	"	"	"	
Silver	ND	0.0807	"	"	"	"	"	"	
Zinc	78.4	40.3	"	10	"	"	"	"	

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.0672	0.0500	mg/kg	1	1102604	10/26/11	10/28/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite A
R110145-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance (EC)	1.66	0.00100 mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B
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Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.8		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	0.48	0.46	mg/kg	1	1110404	10/28/11	11/04/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	479	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	167	1.00	"	"	"	"	"	"	
Sodium	491	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.92		units	"	1103002	10/30/11	10/30/11	"	

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite B
R110145-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1102411	10/24/11	10/25/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1102410	10/24/11	10/26/11	EPA 8260B	
Toluene	0.016	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.8 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		101 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	78.4-125		"	"	"	"	

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite B
R110145-06 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1102611	10/26/11	10/28/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	11.3	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	6.93	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	11.3	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		102 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		104 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		107 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		108 %	41.7-139		"	"	"	"	

Calculated Analytes

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite B
R110145-06 (Soil)

Summit Scientific

Calculated Analytes

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium+3 Calculated	22.7	0.440	mg/kg	1	1110404	10/28/11	11/04/11	Calculation	

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	6.42	1.00	mg/kg	10	1102507	10/26/11	10/27/11	EPA 6020A	
Barium	91.7	50.0	"	"	"	"	"	"	
Cadmium	1.21	0.100	"	1	"	"	"	"	
Chromium	23.8	1.00	"	10	"	"	"	"	
Copper	20.6	5.00	"	"	"	"	"	"	
Lead	18.1	5.00	"	"	"	"	"	"	
Nickel	26.5	5.00	"	"	"	"	"	"	
Selenium	2.69	0.100	"	1	"	"	"	"	
Silver	0.169	0.100	"	"	"	"	"	"	
Zinc	34.6	5.00	"	"	"	"	"	"	

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Mercury	0.173	0.0500	mg/kg	1	1102604	10/26/11	10/28/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/22/11 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite B
R110145-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance (EC)	1.13	0.00100 mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B
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Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.9		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	1.1	0.44	mg/kg	1	1110404	10/28/11	11/04/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	76.3	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	34.1	1.00	"	"	"	"	"	"	
Sodium	863	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	20.6		units	"	1103002	10/30/11	10/30/11	"	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite C
R110145-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1102411	10/24/11	10/25/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1102410	10/24/11	10/26/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.6 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		101 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	78.4-125		"	"	"	"	

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Project Number: [none]
Project Manager: Kristen Stocks

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Composite C
R110145-07 (Soil)

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Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1102611	10/26/11	10/28/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	16.1	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	21.0	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	9.82	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	5.00	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	21.8	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	5.17	5.00	"	"	"	"	"	"	
Fluorene	6.96	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	23.9	5.00	"	"	"	"	"	"	
Phenanthrene	16.2	5.00	"	"	"	"	"	"	
Pyrene	27.7	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		93.0 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		108 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		122 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		107 %	41.7-139		"	"	"	"	

Calculated Analytes

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
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Composite C
R110145-07 (Soil)

Summit Scientific

Calculated Analytes

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	14.3	0.420	mg/kg	1	110404	10/28/11	11/04/11	Calculation	

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.599	0.0746	mg/kg	1	1102507	10/26/11	10/27/11	EPA 6020A	
Barium	174	37.3	"	10	"	"	"	"	
Cadmium	0.755	0.0746	"	1	"	"	"	"	
Chromium	15.4	0.746	"	10	"	"	"	"	
Copper	14.6	3.73	"	"	"	"	"	"	
Lead	1.54	0.373	"	1	"	"	"	"	
Nickel	21.2	3.73	"	10	"	"	"	"	
Selenium	1.48	0.0746	"	1	"	"	"	"	
Silver	0.106	0.0746	"	"	"	"	"	"	
Zinc	69.3	37.3	"	10	"	"	"	"	

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.0838	0.0500	mg/kg	1	1102604	10/26/11	10/28/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Composite C
R110145-07 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance (EC)	1.77	0.00100 mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B
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Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.2		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	1.1	0.42	mg/kg	1	1110404	10/28/11	11/04/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1840	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	525	1.00	"	"	"	"	"	"	
Sodium	488	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.58		units	"	1103002	10/30/11	10/30/11	"	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
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Location 1
R110145-08 (Soil)

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Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.425	0.0798	mg/kg	1	1102507	10/26/11	10/27/11	EPA 6020	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.265	0.00100	mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.4		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	586	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA60 6(2, 3A)	
Magnesium	64.3	1.00	"	"	"	"	"	"	
Sodium	6.49	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0700		units	"	1103002	10/30/11	10/30/11	"	

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Location 1
R110145-08 (Soil)

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Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Location 2
R110145-09 (Soil)

Summit Scientific

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.450	0.0788	mg/kg	1	1102507	10/26/11	10/27/11	EPA 6020	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.106	0.00100	mmhos/cm	1	1102904	10/29/11	10/29/11	SM 2510B	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.2		pH Units	"	1102905	10/29/11	10/29/11	EPA 9045B	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	186	2.50	mg/kg	1	1102510	10/25/11	10/29/11	EPA 6020/USDA60 6(2, 3A)	
Magnesium	25.1	1.00	"	"	"	"	"	"	
Sodium	ND	5.00	"	"	"	"	"	"	

Date Sampled: 10/22/11 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0500		units	"	1103002	10/30/11	10/30/11	"	

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Location 2
R110145-09 (Soil)

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Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 1102411 - EPA 3550A

Blank (1102411-BLK1)				Prepared & Analyzed: 10/24/11						
C10-C28 (TEPH-DRO)	ND	50	mg/kg							
C28-C36 (TEPH-ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.6		"	12.5		100	88.8-124			
LCS (1102411-BS1)				Prepared & Analyzed: 10/24/11						
C10-C28 (TEPH-DRO)	527	50	mg/kg	501		105	85-129		11.8	
LCS Dup (1102411-BSD1)				Prepared & Analyzed: 10/24/11						
C10-C28 (TEPH-DRO)	493	50	mg/kg	501		98.4	85-129	6.57	11.8	
Matrix Spike (1102411-MS1)				Prepared & Analyzed: 10/24/11						
C10-C28 (TEPH-DRO)	485	50	mg/kg	501	ND	96.7	77.3-134		8.39	
Matrix Spike Dup (1102411-MSD1)				Prepared & Analyzed: 10/24/11						
C10-C28 (TEPH-DRO)	496	50	mg/kg	501	ND	98.9	77.3-134	2.26	8.39	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102410 - EPA 5030 Soil MS

Blank (1102410-BLK1)

Prepared: 10/24/11 Analyzed: 10/25/11

Benzene	ND	0.0050	mg/kg
Toluene	ND	0.0050	"
Ethylbenzene	ND	0.0050	"
Xylenes (total)	ND	0.0050	"
Gasoline Range Hydrocarbons	ND	0.50	"

Surrogate: 1,2-Dichloroethane-d4	0.0317	"	0.0400	79.2	67.4-143
Surrogate: Toluene-d8	0.0366	"	0.0400	91.5	77.3-114
Surrogate: 4-Bromofluorobenzene	0.0379	"	0.0400	94.6	78.4-125

LCS (1102410-BS1)

Prepared: 10/24/11 Analyzed: 10/25/11

Benzene	0.0729	0.0050	mg/kg	0.100	72.9	61-139	11.1
Toluene	0.0983	0.0050	"	0.100	98.3	64-132	10.9
Ethylbenzene	0.0992	0.0050	"	0.100	99.2	68.7-135	20
m,p-Xylene	0.214	0.010	"	0.200	107	70.4-129	20
o-Xylene	0.102	0.0050	"	0.100	102	66.9-126	20

Surrogate: 1,2-Dichloroethane-d4	0.0316	"	0.0400	79.1	67.4-143
Surrogate: Toluene-d8	0.0363	"	0.0400	90.7	77.3-114
Surrogate: 4-Bromofluorobenzene	0.0368	"	0.0400	92.1	78.4-125

LCS Dup (1102410-BSD1)

Prepared: 10/24/11 Analyzed: 10/25/11

Benzene	0.0722	0.0050	mg/kg	0.100	72.2	61-139	0.951	11.1
Toluene	0.0964	0.0050	"	0.100	96.4	64-132	1.97	10.9
Ethylbenzene	0.0975	0.0050	"	0.100	97.5	68.7-135	1.77	20
m,p-Xylene	0.210	0.010	"	0.200	105	70.4-129	1.98	20
o-Xylene	0.0996	0.0050	"	0.100	99.6	66.9-126	1.94	20

Surrogate: 1,2-Dichloroethane-d4	0.0308	"	0.0400	77.0	67.4-143
Surrogate: Toluene-d8	0.0358	"	0.0400	89.5	77.3-114
Surrogate: 4-Bromofluorobenzene	0.0366	"	0.0400	91.6	78.4-125

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102410 - EPA 5030 Soil MS

Matrix Spike (1102410-MS1)		Source: R110148-02			Prepared: 10/24/11	Analyzed: 10/25/11			
Benzene	0.0736	0.0050	mg/kg	0.100	ND	73.6	42.9-137		17.9
Toluene	0.0971	0.0050	"	0.100	ND	97.1	42.6-130		11.9
Ethylbenzene	0.0968	0.0050	"	0.100	ND	96.8	39-133		20
m,p-Xylene	0.209	0.010	"	0.200	ND	105	34.7-134		20
o-Xylene	0.0994	0.0050	"	0.100	ND	99.4	41.3-126		20
Surrogate: 1,2-Dichloroethane-d4	0.0341		"	0.0400		85.2	67.4-143		
Surrogate: Toluene-d8	0.0362		"	0.0400		90.6	77.3-114		
Surrogate: 4-Bromofluorobenzene	0.0371		"	0.0400		92.7	78.4-125		

Matrix Spike Dup (1102410-MSD1)		Source: R110148-02			Prepared: 10/24/11	Analyzed: 10/25/11			
Benzene	0.0726	0.0050	mg/kg	0.100	ND	72.6	42.9-137	1.35	17.9
Toluene	0.0980	0.0050	"	0.100	ND	98.0	42.6-130	0.830	11.9
Ethylbenzene	0.0963	0.0050	"	0.100	ND	96.3	39-133	0.528	20
m,p-Xylene	0.209	0.010	"	0.200	ND	105	34.7-134	0.0143	20
o-Xylene	0.0996	0.0050	"	0.100	ND	99.6	41.3-126	0.211	20
Surrogate: 1,2-Dichloroethane-d4	0.0338		"	0.0400		84.5	67.4-143		
Surrogate: Toluene-d8	0.0363		"	0.0400		90.7	77.3-114		
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		93.1	78.4-125		

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Entek GRB LLC
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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 1102611 - EPA 5030 Soil MS

Blank (1102611-BLK1)

Prepared: 10/26/11 Analyzed: 10/28/11

Acenaphthene	ND	5.00	ug/kg
Acenaphthylene	ND	5.00	"
Anthracene	ND	5.00	"
Benzo (a) anthracene	ND	5.00	"
Benzo (b) fluoranthene	ND	5.00	"
Benzo (k) fluoranthene	ND	5.00	"
Benzo (g,h,i) perylene	ND	5.00	"
Benzo (a) pyrene	ND	5.00	"
Chrysene	ND	5.00	"
Dibenz (a,h) anthracene	ND	10.0	"
Fluoranthene	ND	5.00	"
Fluorene	ND	5.00	"
Indeno (1,2,3-cd) pyrene	ND	10.0	"
Naphthalene	ND	5.00	"
Phenanthrene	ND	5.00	"
Pyrene	ND	5.00	"

Surrogate: Nitrobenzene-d5	27.3		"	33.3	81.9	21.8-138
Surrogate: 2-Fluorobiphenyl	27.9		"	33.1	84.1	31.2-131
Surrogate: 2,4,6-Tribromophenol	18.5		"	33.3	55.4	44.5-144
Surrogate: Terphenyl-d14	28.3		"	32.7	86.6	41.7-139

LCS (1102611-BS1)

Prepared: 10/26/11 Analyzed: 10/28/11

Acenaphthene	33.5	5.00	ug/kg	33.3	101	30-120	30
Acenaphthylene	32.9	5.00	"	33.3	98.8	30-120	30
Anthracene	33.3	5.00	"	33.3	99.9	30-120	30
Benzo (a) anthracene	34.4	5.00	"	33.3	103	30-120	30
Benzo (b) fluoranthene	31.3	5.00	"	33.3	93.8	30-120	30
Benzo (k) fluoranthene	28.0	5.00	"	33.3	84.0	30-120	30
Benzo (g,h,i) perylene	29.6	5.00	"	33.3	88.7	30-120	30
Benzo (a) pyrene	32.5	5.00	"	33.3	97.6	30-120	30
Chrysene	30.5	5.00	"	33.3	91.5	30-120	30
Dibenz (a,h) anthracene	27.5	10.0	"	33.3	82.6	30-120	30
Fluoranthene	34.2	5.00	"	33.3	102	30-120	30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102611 - EPA 5030 Soil MS

LCS (1102611-BS1)

Prepared: 10/26/11 Analyzed: 10/28/11

Fluorene	33.9	5.00	ug/kg	33.3		102	30-120		30	
Indeno (1,2,3-cd) pyrene	30.7	10.0	"	33.3		92.0	30-120		30	
Naphthalene	31.7	5.00	"	33.3		95.1	30-120		30	
Phenanthrene	33.0	5.00	"	33.3		98.9	30-120		30	
Pyrene	33.1	5.00	"	33.3		99.3	30-120		30	
Surrogate: Nitrobenzene-d5	34.5		"	33.3		103	21.8-138			
Surrogate: 2-Fluorobiphenyl	35.1		"	33.1		106	31.2-131			
Surrogate: 2,4,6-Tribromophenol	22.7		"	33.3		68.0	44.5-144			
Surrogate: Terphenyl-d14	33.2		"	32.7		102	41.7-139			

LCS Dup (1102611-BSD1)

Prepared: 10/26/11 Analyzed: 10/28/11

Acenaphthene	33.9	5.00	ug/kg	33.3		102	30-120	1.08	30	
Acenaphthylene	33.1	5.00	"	33.3		99.2	30-120	0.317	30	
Anthracene	33.5	5.00	"	33.3		100	30-120	0.592	30	
Benzo (a) anthracene	34.8	5.00	"	33.3		104	30-120	1.05	30	
Benzo (b) fluoranthene	31.9	5.00	"	33.3		95.7	30-120	2.02	30	
Benzo (k) fluoranthene	30.6	5.00	"	33.3		91.8	30-120	8.82	30	
Benzo (g,h,i) perylene	30.5	5.00	"	33.3		91.5	30-120	3.16	30	
Benzo (a) pyrene	32.5	5.00	"	33.3		97.5	30-120	0.120	30	
Chrysene	31.1	5.00	"	33.3		93.2	30-120	1.85	30	
Dibenz (a,h) anthracene	28.4	10.0	"	33.3		85.2	30-120	3.11	30	
Fluoranthene	34.1	5.00	"	33.3		102	30-120	0.120	30	
Fluorene	33.7	5.00	"	33.3		101	30-120	0.573	30	
Indeno (1,2,3-cd) pyrene	30.9	10.0	"	33.3		92.6	30-120	0.622	30	
Naphthalene	32.1	5.00	"	33.3		96.3	30-120	1.26	30	
Phenanthrene	33.5	5.00	"	33.3		101	30-120	1.66	30	
Pyrene	34.4	5.00	"	33.3		103	30-120	3.79	30	
Surrogate: Nitrobenzene-d5	34.5		"	33.3		104	21.8-138			
Surrogate: 2-Fluorobiphenyl	36.0		"	33.1		109	31.2-131			
Surrogate: 2,4,6-Tribromophenol	22.6		"	33.3		67.7	44.5-144			
Surrogate: Terphenyl-d14	35.3		"	32.7		108	41.7-139			

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102611 - EPA 5030 Soil MS

Matrix Spike (1102611-MS1)	Source: R110145-01			Prepared: 10/26/11		Analyzed: 10/28/11			
Acenaphthene	31.8	5.00	ug/kg	33.3	ND	95.4	30-120		30
Acenaphthylene	31.2	5.00	"	33.3	ND	93.6	30-120		30
Anthracene	30.6	5.00	"	33.3	ND	91.8	30-120		30
Benzo (a) anthracene	33.1	5.00	"	33.3	1.14	96.0	30-120		30
Benzo (b) fluoranthene	32.1	5.00	"	33.3	1.24	92.4	30-120		30
Benzo (k) fluoranthene	29.8	5.00	"	33.3	ND	89.4	30-120		30
Benzo (g,h,i) perylene	29.0	5.00	"	33.3	ND	86.9	30-120		30
Benzo (a) pyrene	30.4	5.00	"	33.3	ND	91.1	30-120		30
Chrysene	30.8	5.00	"	33.3	1.19	88.9	30-120		30
Dibenz (a,h) anthracene	26.7	10.0	"	33.3	ND	80.2	30-120		30
Fluoranthene	32.4	5.00	"	33.3	ND	97.3	30-120		30
Fluorene	32.0	5.00	"	33.3	ND	96.0	30-120		30
Indeno (1,2,3-cd) pyrene	30.3	10.0	"	33.3	ND	91.0	30-120		30
Naphthalene	30.8	5.00	"	33.3	ND	92.5	30-120		30
Phenanthrene	31.7	5.00	"	33.3	ND	95.2	30-120		30
Pyrene	32.9	5.00	"	33.3	ND	98.7	30-120		30
Surrogate: Nitrobenzene-d5	34.4		"	33.3		103	21.8-138		
Surrogate: 2-Fluorobiphenyl	33.8		"	33.1		102	31.2-131		
Surrogate: 2,4,6-Tribromophenol	33.0		"	33.3		99.0	44.5-144		
Surrogate: Terphenyl-d14	33.6		"	32.7		103	41.7-139		

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102507 - EPA 3050B

Blank (1102507-BLK1)

Prepared: 10/26/11 Analyzed: 10/27/11

Arsenic	ND	0.100	mg/kg
Arsenic	ND	0.100	"
Barium	ND	5.00	"
Cadmium	ND	0.100	"
Chromium	ND	0.100	"
Copper	ND	0.500	"
Lead	ND	0.500	"
Nickel	ND	0.500	"
Selenium	ND	0.100	"
Silver	ND	0.100	"
Zinc	ND	5.00	"

LCS (1102507-BS1)

Prepared: 10/26/11 Analyzed: 10/27/11

Arsenic	2.76	0.100	mg/kg	2.54	109	80-120	20
Arsenic	2.76	0.100	"	2.54	109	80-120	20
Barium	224	5.00	"	224	99.7	80-120	20
Cadmium	1.02	0.100	"	1.02	101	80-120	20
Chromium	10.2	0.100	"	10.0	101	80-120	20
Copper	21.4	0.500	"	20.0	107	80-120	20
Lead	76.0	0.500	"	75.0	101	80-120	20
Nickel	15.4	0.500	"	15.1	102	80-120	20
Selenium	1.07	0.100	"	1.15	92.9	80-120	20
Silver	1.47	0.100	"	1.54	94.9	80-120	20
Zinc	69.0	5.00	"	75.0	92.1	80-120	20

LCS Dup (1102507-BSD1)

Prepared: 10/26/11 Analyzed: 10/27/11

Arsenic	2.71	0.100	mg/kg	2.54	107	80-120	1.84	20	QM-03
Arsenic	2.71	0.100	"	2.54	107	80-120	1.84	20	
Barium	223	5.00	"	224	99.5	80-120	0.239	20	
Cadmium	1.07	0.100	"	1.02	105	80-120	4.40	20	
Chromium	10.0	0.100	"	10.0	100	80-120	1.22	20	
Copper	20.8	0.500	"	20.0	104	80-120	2.88	20	
Lead	74.1	0.500	"	75.0	98.8	80-120	2.48	20	
Nickel	15.3	0.500	"	15.1	101	80-120	0.893	20	

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102507 - EPA 3050B

LCS Dup (1102507-BSD1)

Prepared: 10/26/11 Analyzed: 10/27/11

Selenium	1.08	0.100	mg/kg	1.15		93.5	80-120	0.653	20	
Silver	1.36	0.100	"	1.54		87.7	80-120	7.81	20	
Zinc	73.9	5.00	"	75.0		98.6	80-120	6.83	20	

Matrix Spike (1102507-MS1)

Source: R110126-02

Prepared: 10/26/11 Analyzed: 10/27/11

Arsenic	8.84	0.770	mg/kg	1.96	5.67	162	75-125		25	QM-03
Arsenic	8.84	0.770	"	1.96	5.67	162	75-125		20	QM-03
Barium	256	38.5	"	173	44.5	122	75-125		25	
Cadmium	0.859	0.0770	"	0.782	0.0350	105	75-125		25	
Chromium	15.1	0.770	"	7.74	6.03	118	75-125		25	
Copper	20.8	3.85	"	15.4	3.99	109	75-125		25	
Lead	53.7	0.385	"	57.8	7.23	80.4	75-125		25	
Nickel	21.1	3.85	"	11.6	6.70	124	75-125		25	
Selenium	1.05	0.770	"	0.886	0.127	104	75-125		25	
Silver	1.12	0.770	"	1.19	0.0117	93.2	75-125		25	
Zinc	106	38.5	"	57.8	31.4	129	75-125		25	QM-07

Matrix Spike Dup (1102507-MSD1)

Source: R110126-02

Prepared: 10/26/11 Analyzed: 10/27/11

Arsenic	7.25	0.753	mg/kg	1.91	5.67	82.6	75-125	19.7	25	
Arsenic	7.25	0.753	"	1.91	5.67	82.6	75-125	19.7	20	
Barium	250	37.6	"	169	44.5	122	75-125	2.36	25	
Cadmium	0.761	0.0753	"	0.764	0.0350	95.0	75-125	12.1	25	
Chromium	12.7	0.753	"	7.56	6.03	87.5	75-125	17.9	25	
Copper	19.7	3.76	"	15.1	3.99	104	75-125	5.52	25	
Lead	47.6	0.376	"	56.5	7.23	71.5	75-125	12.0	25	QM-07
Nickel	20.1	3.76	"	11.4	6.70	118	75-125	5.03	25	
Selenium	0.943	0.753	"	0.866	0.127	94.3	75-125	10.7	25	
Silver	1.04	0.753	"	1.16	0.0117	88.1	75-125	7.89	25	
Zinc	92.9	37.6	"	56.5	31.4	109	75-125	13.2	25	

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Total Mercury by EPA SW846 Method 7471/7470 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102604 - EPA 7471A

Blank (1102604-BLK1)

Prepared: 10/26/11 Analyzed: 10/28/11

Mercury ND 0.0500 mg/kg

LCS (1102604-BS1)

Prepared: 10/26/11 Analyzed: 10/28/11

Mercury 0.376 0.0500 mg/kg 0.400 93.9 80-120 20

LCS Dup (1102604-BSD1)

Prepared: 10/26/11 Analyzed: 10/28/11

Mercury 0.378 0.0500 mg/kg 0.400 94.4 80-120 0.531 20

Matrix Spike (1102604-MS1)

Source: R110163-01

Prepared: 10/26/11 Analyzed: 10/28/11

Mercury 0.301 0.0500 mg/kg 0.294 0.0207 95.3 75-125 20

Matrix Spike Dup (1102604-MSD1)

Source: R110163-01

Prepared: 10/26/11 Analyzed: 10/28/11

Mercury 0.306 0.0500 mg/kg 0.301 0.0207 94.6 75-125 1.72 20

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102904 - General Preparation

Duplicate (1102904-DUP1) **Source: R110145-01** Prepared & Analyzed: 10/29/11

Specific Conductance (EC)	2.05	0.00100	mmhos/cm	2.13	3.68	20
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Batch 1102905 - General Preparation

Duplicate (1102905-DUP1) **Source: R110145-01** Prepared & Analyzed: 10/29/11

pH	7.1		pH Units	7.1	0.422	20
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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1102510 - General Preparation

Blank (1102510-BLK1)

Prepared: 10/25/11 Analyzed: 10/29/11

Calcium	ND	2.50	mg/kg
Magnesium	ND	1.00	"
Sodium	ND	5.00	"

LCS (1102510-BS1)

Prepared: 10/25/11 Analyzed: 10/29/11

Calcium	230	2.50	mg/kg	200	115	70-130	25
Magnesium	83.3	1.00	"	80.0	104	70-130	25
Sodium	385	5.00	"	400	96.3	70-130	25

LCS Dup (1102510-BSD1)

Prepared: 10/25/11 Analyzed: 10/29/11

Calcium	223	2.50	mg/kg	200	111	70-130	3.20	25
Magnesium	79.2	1.00	"	80.0	99.0	70-130	5.05	25
Sodium	395	5.00	"	400	98.7	70-130	2.53	25

Matrix Spike (1102510-MS1)

Source: R110126-01

Prepared: 10/25/11 Analyzed: 10/29/11

Calcium	461	2.50	mg/kg	142	390	49.4	70-130	25	QM-07
Magnesium	168	1.00	"	56.7	140	48.9	70-130	25	QM-07
Sodium	603	5.00	"	283	276	115	70-130	25	

Matrix Spike Dup (1102510-MSD1)

Source: R110126-01

Prepared: 10/25/11 Analyzed: 10/29/11

Calcium	479	2.50	mg/kg	140	390	62.7	70-130	3.84	25	QM-07
Magnesium	171	1.00	"	56.2	140	54.4	70-130	1.70	25	QM-07
Sodium	534	5.00	"	281	276	91.7	70-130	12.2	25	

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
11/04/11 14:52

Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- QM-03 Multiple analyses indicate the percent recovery exceeds the Quality Control acceptance criteria due to a matrix effect.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

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Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 01, 2011

Kristen Stocks
Entek GRB LLC
535 16th Street Suite 620
Denver, CO 80202
RE: Brownlee Pit 13-9

Enclosed are the results of analyses for samples received by Summit Scientific on 11/16/11 09:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pit Side 1	R111115-01	Soil	11/15/11 13:30	11/16/11 09:00
Pit Side 2	R111115-02	Soil	11/15/11 13:30	11/16/11 09:00
Base 1	R111115-03	Soil	11/15/11 13:30	11/16/11 09:00
Base 2	R111115-04	Soil	11/15/11 13:30	11/16/11 09:00

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

R11115

Summit Scientific

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 7 of 11

Client: Chile SCS

Address: 16th St

City/State/Zip: Denver CO 80202

Phone: _____ Fax: _____

Sampler Name:

Project Manager: Kercka Shanks

E-Mail:

Project Name: Bowler 8 + 13-9

Project Number:

[illegible]

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Pit Side 1
R111115-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1111703	11/17/11	11/17/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.9 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1111702	11/17/11	11/17/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		97.9 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	78.4-125		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Pit Side 1
R111115-01 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Acenaphthene	ND	5.00	ug/kg	1	1112101	11/21/11	11/22/11	EPA 8270D SIM
Acenaphthylene	ND	5.00	"	"	"	"	"	"
Anthracene	ND	5.00	"	"	"	"	"	"
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"
Chrysene	5.06	5.00	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"
Fluoranthene	ND	5.00	"	"	"	"	"	"
Fluorene	ND	5.00	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"
Naphthalene	ND	5.00	"	"	"	"	"	"
Phenanthrene	ND	5.00	"	"	"	"	"	"
Pyrene	ND	5.00	"	"	"	"	"	"

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		47.7 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		44.0 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		52.6 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-dl4		41.9 %	41.7-139		"	"	"	"	

Calculated Analytes

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	ND	0.960	mg/kg	1	1120110	11/28/11	12/01/11	Calculation	

Total Metals by EPA Method 6020 - Dry Weight Basis

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Pit Side 1
R111115-01 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.20	0.115	mg/kg	1	1111807	11/18/11	11/22/11	EPA 6020A	
Barium	163	5.77	"	"	"	"	"	"	
Cadmium	0.545	0.115	"	"	"	"	"	"	
Chromium	0.545	0.115	"	"	"	"	"	"	
Copper	13.8	0.577	"	"	"	"	"	"	
Lead	16.4	0.577	"	"	"	"	"	"	
Nickel	6.15	0.577	"	"	"	"	"	"	
Selenium	1.16	0.115	"	"	"	"	"	"	
Silver	0.130	0.115	"	"	"	"	"	"	
Zinc	19.1	5.77	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Mercury	0.0519	0.0500	mg/kg	1	1111801	11/18/11	11/23/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	1.00	0.00100	mmhos/cm	1	1112006	11/20/11	11/22/11	SM 2510B	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.0		pH Units	"	1112002	11/20/11	11/22/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Summit Scientific

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Entek GRB LLC
535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Pit Side 1
R111115-01 (Soil)

Summit Scientific

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.96	mg/kg	1	1120110	11/28/11	12/01/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.5	2.50	mg/kg	1	1111804	11/18/11	11/20/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	34.2	1.00	"	"	"	"	"	"	
Sodium	673	5.00	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	20.5		units	"	1112304	11/23/11	11/23/11	"	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Pit Side 2
R111115-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	320	50	mg/kg	1	1111703	11/17/11	11/17/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	100	50	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.1 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1111702	11/17/11	11/17/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		121 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	78.4-125		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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535 16th Street Suite 620
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Pit Side 2
R111115-02 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Acenaphthene	ND	5.00	ug/kg	1	1112101	11/21/11	11/22/11	EPA 8270D SIM
Acenaphthylene	ND	5.00	"	"	"	"	"	"
Anthracene	ND	5.00	"	"	"	"	"	"
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"
Benzo (b) fluoranthene	9.62	5.00	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"
Benzo (g,h,i) perylene	7.05	5.00	"	"	"	"	"	"
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"
Chrysene	26.9	5.00	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"
Fluoranthene	ND	5.00	"	"	"	"	"	"
Fluorene	ND	5.00	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"
Naphthalene	ND	5.00	"	"	"	"	"	"
Phenanthrene	ND	5.00	"	"	"	"	"	"
Pyrene	34.6	5.00	"	"	"	"	"	"

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		62.9 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		67.0 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		69.2 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		51.0 %	41.7-139		"	"	"	"	

Calculated Analytes

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	ND	0.450	mg/kg	1	1120110	11/28/11	12/01/11	Calculation	

Total Metals by EPA Method 6020 - Dry Weight Basis

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Pit Side 2
R111115-02 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.18	0.100	mg/kg	1	1111807	11/18/11	11/22/11	EPA 6020A	
Barium	277	5.00	"	"	"	"	"	"	
Cadmium	0.523	0.100	"	"	"	"	"	"	
Chromium	0.522	0.100	"	"	"	"	"	"	
Copper	10.8	0.500	"	"	"	"	"	"	
Lead	12.6	0.500	"	"	"	"	"	"	
Nickel	12.6	0.500	"	"	"	"	"	"	
Selenium	0.551	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	45.4	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	1111801	11/18/11	11/23/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.09	0.00100	mmhos/cm	1	1112006	11/20/11	11/22/11	SM 2510B	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.8		pH Units	"	1112002	11/20/11	11/22/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Pit Side 2
R111115-02 (Soil)

Summit Scientific

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	0.8	0.45	mg/kg	1	1120110	11/28/11	12/01/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	398	2.50	mg/kg	1	1111804	11/18/11	11/20/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	125	1.00	"	"	"	"	"	"	
Sodium	670	5.00	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.51		units	"	1112304	11/23/11	11/23/11	"	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Base 1
R111115-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1111703	11/17/11	11/17/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1111702	11/17/11	11/17/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	78.4-125		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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535 16th Street Suite 620
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Base 1
R111115-03 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1112101	11/21/11	11/22/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		62.8 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		66.0 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		101 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		66.2 %	41.7-139		"	"	"	"	

Calculated Analytes

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	ND	0.440	mg/kg	1	1120110	11/28/11	12/01/11	Calculation	

Total Metals by EPA Method 6020 - Dry Weight Basis

Summit Scientific

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535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Base 1
R111115-03 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.39	0.100	mg/kg	1	1111807	11/18/11	11/22/11	EPA 6020A	
Barium	159	5.00	"	"	"	"	"	"	
Cadmium	0.815	0.100	"	"	"	"	"	"	
Chromium	0.815	0.100	"	"	"	"	"	"	
Copper	14.6	0.500	"	"	"	"	"	"	
Lead	20.8	0.500	"	"	"	"	"	"	
Nickel	16.3	0.500	"	"	"	"	"	"	
Selenium	1.18	0.100	"	"	"	"	"	"	
Silver	0.144	0.100	"	"	"	"	"	"	
Zinc	53.8	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.136	0.0500	mg/kg	1	1111801	11/18/11	11/23/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.92	0.00100	mmhos/cm	1	1112006	11/20/11	11/22/11	SM 2510B	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.6		pH Units	"	1112002	11/20/11	11/22/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

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535 16th Street Suite 620
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Base 1
R111115-03 (Soil)

Summit Scientific

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.44	mg/kg	1	1120110	11/28/11	12/01/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	590	2.50	mg/kg	1	1111804	11/18/11	11/20/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	302	1.00	"	"	"	"	"	"	
Sodium	385	5.00	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.21		units	"	1112304	11/23/11	11/23/11	"	

Summit Scientific

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Base 2
R111115-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1111703	11/17/11	11/17/11	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.8 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1111702	11/17/11	11/17/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		100 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	78.4-125		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

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Base 2
R111115-04 (Soil)

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Semivolatile Organic Compounds by EPA Method 8270D SIM

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1112101	11/21/11	11/22/11	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		64.2 %	21.8-138		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		71.1 %	31.2-131		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		92.5 %	44.5-144		"	"	"	"	
Surrogate: Terphenyl-d14		67.1 %	41.7-139		"	"	"	"	

Calculated Analytes

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	ND	0.440	mg/kg	1	1120110	11/28/11	12/01/11	Calculation	

Total Metals by EPA Method 6020 - Dry Weight Basis

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Project Number: [none]
Project Manager: Kristen Stocks

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Base 2
R111115-04 (Soil)

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Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.13	0.100	mg/kg	1	1111807	11/18/11	11/22/11	EPA 6020A	
Barium	125	5.00	"	"	"	"	"	"	
Cadmium	0.410	0.100	"	"	"	"	"	"	
Chromium	0.410	0.100	"	"	"	"	"	"	
Copper	12.7	0.500	"	"	"	"	"	"	
Lead	12.8	0.500	"	"	"	"	"	"	
Nickel	6.38	0.500	"	"	"	"	"	"	
Selenium	1.47	0.100	"	"	"	"	"	"	
Silver	0.115	0.100	"	"	"	"	"	"	
Zinc	31.1	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.0547	0.0500	mg/kg	1	1111801	11/18/11	11/23/11	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.560	0.00100	mmhos/cm	1	1112006	11/20/11	11/22/11	SM 2510B	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.4		pH Units	"	1112002	11/20/11	11/22/11	EPA 9045B	

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

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Project Number: [none]
Project Manager: Kristen Stocks

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Base 2
R111115-04 (Soil)

Summit Scientific

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	0.87	0.44	mg/kg	1	1120110	11/28/11	12/01/11	3060A/7196 A	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.8	2.50	mg/kg	1	1111804	11/18/11	11/20/11	EPA 6020/USDA6 0 6(2, 3A)	
Magnesium	31.8	1.00	"	"	"	"	"	"	
Sodium	89.2	5.00	"	"	"	"	"	"	

Date Sampled: 11/15/11 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.37		units	"	1112304	11/23/11	11/23/11	"	

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Project Number: [none]
Project Manager: Kristen Stocks

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Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1111703 - EPA 3550A

Blank (1111703-BLK1)

Prepared & Analyzed: 11/17/11

C10-C28 (TEPH-DRO)	ND	50	mg/kg
C28-C36 (TEPH-ORO)	ND	50	"

Surrogate: o-Terphenyl	12.8	"	12.5	103	88.8-124
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LCS (1111703-BS1)

Prepared & Analyzed: 11/17/11

C10-C28 (TEPH-DRO)	578	50	mg/kg	501	115	85-129	11.8
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LCS Dup (1111703-BSD1)

Prepared & Analyzed: 11/17/11

C10-C28 (TEPH-DRO)	579	50	mg/kg	501	116	85-129	0.271	11.8
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Matrix Spike (1111703-MS1)

Source: R111115-01

Prepared & Analyzed: 11/17/11

C10-C28 (TEPH-DRO)	518	50	mg/kg	501	42.8	94.8	77.3-134	8.39
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Matrix Spike Dup (1111703-MSD1)

Source: R111115-01

Prepared & Analyzed: 11/17/11

C10-C28 (TEPH-DRO)	500	50	mg/kg	501	42.8	91.2	77.3-134	3.56	8.39
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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

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Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1111702 - EPA 5030 Soil MS

Blank (1111702-BLK1)

Prepared & Analyzed: 11/17/11

Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0487		"	0.0400	122	67.4-143				
Surrogate: Toluene-d8	0.0411		"	0.0400	103	77.3-114				
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400	107	78.4-125				

LCS (1111702-BS1)

Prepared & Analyzed: 11/17/11

Benzene	0.0843	0.0050	mg/kg	0.100	84.3	61-139		11.1		
Toluene	0.0913	0.0050	"	0.100	91.3	64-132		10.9		
Ethylbenzene	0.0975	0.0050	"	0.100	97.5	68.7-135		20		
m,p-Xylene	0.198	0.010	"	0.200	99.2	70.4-129		20		
o-Xylene	0.0991	0.0050	"	0.100	99.1	66.9-126		20		
Surrogate: 1,2-Dichloroethane-d4	0.0472		"	0.0400	118	67.4-143				
Surrogate: Toluene-d8	0.0407		"	0.0400	102	77.3-114				
Surrogate: 4-Bromofluorobenzene	0.0429		"	0.0400	107	78.4-125				

LCS Dup (1111702-BSD1)

Prepared & Analyzed: 11/17/11

Benzene	0.0872	0.0050	mg/kg	0.100	87.2	61-139	3.36	11.1		
Toluene	0.0943	0.0050	"	0.100	94.3	64-132	3.23	10.9		
Ethylbenzene	0.100	0.0050	"	0.100	100	68.7-135	2.73	20		
m,p-Xylene	0.204	0.010	"	0.200	102	70.4-129	2.77	20		
o-Xylene	0.103	0.0050	"	0.100	103	66.9-126	4.15	20		
Surrogate: 1,2-Dichloroethane-d4	0.0470		"	0.0400	118	67.4-143				
Surrogate: Toluene-d8	0.0404		"	0.0400	101	77.3-114				
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400	105	78.4-125				

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

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Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1111702 - EPA 5030 Soil MS

Matrix Spike (1111702-MS1)		Source: R111115-01			Prepared & Analyzed: 11/17/11					
Benzene	0.0874	0.0050	mg/kg	0.100	ND	87.4	42.9-137		17.9	
Toluene	0.0938	0.0050	"	0.100	ND	93.8	42.6-130		11.9	
Ethylbenzene	0.0976	0.0050	"	0.100	ND	97.6	39-133		20	
m,p-Xylene	0.198	0.010	"	0.200	ND	99.1	34.7-134		20	
o-Xylene	0.0987	0.0050	"	0.100	ND	98.7	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0496		"	0.0400		124	67.4-143			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	78.4-125			

Matrix Spike Dup (1111702-MSD1)		Source: R111115-01			Prepared & Analyzed: 11/17/11					
Benzene	0.0868	0.0050	mg/kg	0.100	ND	86.8	42.9-137	0.654	17.9	
Toluene	0.0930	0.0050	"	0.100	ND	93.0	42.6-130	0.867	11.9	
Ethylbenzene	0.0961	0.0050	"	0.100	ND	96.1	39-133	1.52	20	
m,p-Xylene	0.195	0.010	"	0.200	ND	97.6	34.7-134	1.60	20	
o-Xylene	0.0980	0.0050	"	0.100	ND	98.0	41.3-126	0.732	20	
Surrogate: 1,2-Dichloroethane-d4	0.0481		"	0.0400		120	67.4-143			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	78.4-125			

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Project: Brownlee Pit 13-9
Project Number: [none]
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Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1112101 - EPA 5030 Soil MS

Blank (1112101-BLK1)

Prepared: 11/21/11 Analyzed: 11/22/11

Acenaphthene	ND	5.00	ug/kg							
Acenaphthylene	ND	5.00	"							
Anthracene	ND	5.00	"							
Benzo (a) anthracene	ND	5.00	"							
Benzo (b) fluoranthene	ND	5.00	"							
Benzo (k) fluoranthene	ND	5.00	"							
Benzo (g,h,i) perylene	ND	5.00	"							
Benzo (a) pyrene	ND	5.00	"							
Chrysene	ND	5.00	"							
Dibenz (a,h) anthracene	ND	10.0	"							
Fluoranthene	ND	5.00	"							
Fluorene	ND	5.00	"							
Indeno (1,2,3-cd) pyrene	ND	10.0	"							
Naphthalene	ND	5.00	"							
Phenanthrene	ND	5.00	"							
Pyrene	ND	5.00	"							
Surrogate: Nitrobenzene-d5	23.8		"	33.3	71.4	21.8-138				
Surrogate: 2-Fluorobiphenyl	24.7		"	33.1	74.7	31.2-131				
Surrogate: 2,4,6-Tribromophenol	25.2		"	33.3	75.6	44.5-144				
Surrogate: Terphenyl-d14	23.4		"	32.7	71.7	41.7-139				

LCS (1112101-BS1)

Prepared: 11/21/11 Analyzed: 11/22/11

Acenaphthene	13.9	5.00	ug/kg	16.7	83.3	30-120	30
Acenaphthylene	14.3	5.00	"	16.7	85.6	30-120	30
Anthracene	18.0	5.00	"	16.7	108	30-120	30
Benzo (a) anthracene	15.1	5.00	"	16.7	90.6	30-120	30
Benzo (b) fluoranthene	13.3	5.00	"	16.7	79.6	30-120	30
Benzo (k) fluoranthene	13.2	5.00	"	16.7	79.3	30-120	30
Benzo (g,h,i) perylene	12.0	5.00	"	16.7	72.2	30-120	30
Benzo (a) pyrene	13.6	5.00	"	16.7	81.3	30-120	30
Chrysene	14.0	5.00	"	16.7	84.0	30-120	30
Dibenz (a,h) anthracene	10.7	10.0	"	16.7	64.2	30-120	30
Fluoranthene	15.7	5.00	"	16.7	94.1	30-120	30
Fluorene	14.3	5.00	"	16.7	85.6	30-120	30
Indeno (1,2,3-cd) pyrene	12.6	10.0	"	16.7	75.6	30-120	30
Naphthalene	10.5	5.00	"	16.7	63.2	30-120	30
Phenanthrene	16.7	5.00	"	16.7	100	30-120	30
Pyrene	15.3	5.00	"	16.7	92.0	30-120	30

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

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Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1112101 - EPA 5030 Soil MS

LCS (1112101-BS1)

Prepared: 11/21/11 Analyzed: 11/22/11

Surrogate: Nitrobenzene-d5	20.6		ug/kg	33.3		61.7	21.8-138			
Surrogate: 2-Fluorobiphenyl	21.6		"	33.1		65.3	31.2-131			
Surrogate: 2,4,6-Tribromophenol	31.9		"	33.3		95.6	44.5-144			
Surrogate: Terphenyl-d14	28.7		"	32.7		87.7	41.7-139			

LCS Dup (1112101-BSD1)

Prepared: 11/21/11 Analyzed: 11/22/11

Acenaphthene	10.9	5.00	ug/kg	16.7		65.4	30-120	24.2	30	
Acenaphthylene	11.5	5.00	"	16.7		69.1	30-120	21.3	30	
Anthracene	13.8	5.00	"	16.7		82.5	30-120	26.6	30	
Benzo (a) anthracene	11.3	5.00	"	16.7		67.8	30-120	28.7	30	
Benzo (b) fluoranthene	10.0	5.00	"	16.7		60.1	30-120	28.0	30	
Benzo (k) fluoranthene	10.6	5.00	"	16.7		63.8	30-120	21.8	30	
Benzo (g,h,i) perylene	10.3	5.00	"	16.7		61.6	30-120	15.8	30	
Benzo (a) pyrene	10.9	5.00	"	16.7		65.6	30-120	21.3	30	
Chrysene	10.6	5.00	"	16.7		63.9	30-120	27.2	30	
Dibenz (a,h) anthracene	8.25	10.0	"	16.7		49.5	30-120	25.9	30	
Fluoranthene	12.1	5.00	"	16.7		72.4	30-120	26.1	30	
Fluorene	11.2	5.00	"	16.7		67.4	30-120	23.8	30	
Indeno (1,2,3-cd) pyrene	11.8	10.0	"	16.7		70.7	30-120	6.66	30	
Naphthalene	10.5	5.00	"	16.7		62.9	30-120	0.438	30	
Phenanthrene	13.6	5.00	"	16.7		81.7	30-120	20.4	30	
Pyrene	12.2	5.00	"	16.7		73.1	30-120	22.9	30	
Surrogate: Nitrobenzene-d5	25.5		"	33.3		76.4	21.8-138			
Surrogate: 2-Fluorobiphenyl	28.8		"	33.1		86.9	31.2-131			
Surrogate: 2,4,6-Tribromophenol	29.9		"	33.3		89.6	44.5-144			
Surrogate: Terphenyl-d14	29.6		"	32.7		90.6	41.7-139			

Matrix Spike (1112101-MS1)

Source: R111114-01

Prepared: 11/21/11 Analyzed: 11/22/11

Acenaphthene	11.9	5.00	ug/kg	16.7	ND	71.4	30-120		30	
Acenaphthylene	10.9	5.00	"	16.7	ND	65.4	30-120		30	
Anthracene	16.2	5.00	"	16.7	ND	97.0	30-120		30	
Benzo (a) anthracene	14.2	5.00	"	16.7	ND	85.4	30-120		30	
Benzo (b) fluoranthene	13.1	5.00	"	16.7	ND	78.5	30-120		30	
Benzo (k) fluoranthene	12.3	5.00	"	16.7	ND	73.7	30-120		30	
Benzo (g,h,i) perylene	12.8	5.00	"	16.7	ND	76.7	30-120		30	
Benzo (a) pyrene	13.2	5.00	"	16.7	ND	79.0	30-120		30	
Chrysene	13.0	5.00	"	16.7	ND	78.1	30-120		30	
Dibenz (a,h) anthracene	10.2	10.0	"	16.7	ND	61.2	30-120		30	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1112101 - EPA 5030 Soil MS

Matrix Spike (1112101-MS1)		Source: R111114-01			Prepared: 11/21/11		Analyzed: 11/22/11			
Fluoranthene	15.3	5.00	ug/kg	16.7	ND	91.8	30-120		30	
Fluorene	13.4	5.00	"	16.7	ND	80.1	30-120		30	
Indeno (1,2,3-cd) pyrene	12.2	10.0	"	16.7	ND	73.0	30-120		30	
Naphthalene	4.44	5.00	"	16.7	ND	26.7	30-120		30	QM-07
Phenanthrene	15.1	5.00	"	16.7	ND	90.4	30-120		30	
Pyrene	14.7	5.00	"	16.7	ND	88.1	30-120		30	
Surrogate: Nitrobenzene-d5	14.2		"	33.3		42.7	21.8-138			
Surrogate: 2-Fluorobiphenyl	14.2		"	33.1		42.9	31.2-131			
Surrogate: 2,4,6-Tribromophenol	28.1		"	33.3		84.2	44.5-144			
Surrogate: Terphenyl-d14	24.0		"	32.7		73.5	41.7-139			

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1111807 - EPA 3050B

Blank (1111807-BLK1)

Prepared: 11/18/11 Analyzed: 11/22/11

Arsenic	ND	0.100	mg/kg
Barium	ND	5.00	"
Cadmium	ND	0.100	"
Chromium	ND	0.100	"
Copper	ND	0.500	"
Lead	ND	0.500	"
Nickel	ND	0.500	"
Selenium	ND	0.100	"
Silver	ND	0.100	"
Zinc	ND	5.00	"

LCS (1111807-BS1)

Prepared: 11/18/11 Analyzed: 11/22/11

Arsenic	2.67	0.100	mg/kg	2.54	105	80-120	20
Barium	234	5.00	"	224	104	80-120	20
Cadmium	1.05	0.100	"	1.02	104	80-120	20
Chromium	10.7	0.100	"	10.0	107	80-120	20
Copper	21.8	0.500	"	20.0	109	80-120	20
Lead	83.5	0.500	"	75.0	111	80-120	20
Nickel	15.8	0.500	"	15.1	105	80-120	20
Selenium	1.18	0.100	"	1.15	103	80-120	20
Silver	1.44	0.100	"	1.54	93.4	80-120	20
Zinc	75.6	5.00	"	75.0	101	80-120	20

LCS Dup (1111807-BSD1)

Prepared: 11/18/11 Analyzed: 11/22/11

Arsenic	2.72	0.100	mg/kg	2.54	107	80-120	1.86	20
Barium	237	5.00	"	224	106	80-120	1.38	20
Cadmium	1.07	0.100	"	1.02	105	80-120	1.22	20
Chromium	11.0	0.100	"	10.0	110	80-120	2.54	20
Copper	21.9	0.500	"	20.0	109	80-120	0.267	20
Lead	81.1	0.500	"	75.0	108	80-120	2.87	20
Nickel	15.7	0.500	"	15.1	104	80-120	0.901	20
Selenium	1.17	0.100	"	1.15	102	80-120	1.42	20
Silver	1.47	0.100	"	1.54	95.0	80-120	1.75	20
Zinc	76.2	5.00	"	75.0	102	80-120	0.861	20

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535 16th Street Suite 620
Denver CO, 80202

Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1111807 - EPA 3050B

Matrix Spike (1111807-MS1)		Source: R111114-01			Prepared: 11/18/11		Analyzed: 11/22/11			
Arsenic	4.36	0.0757	mg/kg	1.92	2.56	93.8	75-125		25	
Barium	321	3.79	"	170	143	104	75-125		25	
Cadmium	0.830	0.0757	"	0.769	0.122	92.1	75-125		25	
Chromium	14.8	0.0757	"	7.61	8.19	86.3	75-125		25	
Copper	20.1	0.379	"	15.2	6.79	87.5	75-125		25	
Lead	62.0	0.379	"	56.8	6.86	97.1	75-125		25	
Nickel	18.9	0.379	"	11.4	8.61	90.4	75-125		25	
Selenium	0.817	0.0757	"	0.871	0.161	75.3	75-125		25	
Silver	0.509	0.0757	"	1.17	0.0291	41.0	75-125		25	QM-07
Zinc	73.3	3.79	"	56.8	23.8	87.1	75-125		25	

Matrix Spike Dup (1111807-MSD1)		Source: R111114-01			Prepared: 11/18/11		Analyzed: 11/22/11			
Arsenic	4.39	0.0753	mg/kg	1.91	2.56	96.0	75-125	0.711	25	
Barium	370	3.76	"	169	143	134	75-125	14.2	25	QM-07
Cadmium	0.959	0.0753	"	0.764	0.122	109	75-125	14.4	25	
Chromium	16.5	0.0753	"	7.57	8.19	110	75-125	11.2	25	
Copper	22.7	0.376	"	15.1	6.79	105	75-125	12.3	25	
Lead	65.5	0.376	"	56.5	6.86	104	75-125	5.42	25	
Nickel	19.2	0.376	"	11.4	8.61	93.2	75-125	1.37	25	
Selenium	1.04	0.0753	"	0.866	0.161	102	75-125	24.2	25	
Silver	0.590	0.0753	"	1.16	0.0291	48.2	75-125	14.7	25	QM-07
Zinc	73.5	3.76	"	56.5	23.8	87.9	75-125	0.250	25	

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Total Mercury by EPA Method 7471/7470 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1111801 - EPA 7471A

Blank (1111801-BLK1)

Prepared: 11/18/11 Analyzed: 11/23/11

Mercury ND 0.0500 mg/kg

LCS (1111801-BS1)

Prepared: 11/18/11 Analyzed: 11/23/11

Mercury 0.394 0.0500 mg/kg 0.400 98.6 80-120 20

LCS Dup (1111801-BSD1)

Prepared: 11/18/11 Analyzed: 11/23/11

Mercury 0.380 0.0500 mg/kg 0.400 94.9 80-120 3.78 20

Matrix Spike (1111801-MS1)

Source: R111114-01

Prepared: 11/18/11 Analyzed: 11/23/11

Mercury 0.343 0.0500 mg/kg 0.347 0.00606 97.1 75-125 20

Matrix Spike Dup (1111801-MSD1)

Source: R111114-01

Prepared: 11/18/11 Analyzed: 11/23/11

Mercury 0.352 0.0500 mg/kg 0.358 0.00606 96.7 75-125 2.71 20

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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1112002 - General Preparation

Duplicate (1112002-DUP1)		Source: R111114-01		Prepared: 11/20/11 Analyzed: 11/22/11	
pH	8.3	pH Units	8.4	0.720	20

Batch 1112006 - General Preparation

Duplicate (1112006-DUP1)		Source: R111114-01		Prepared: 11/20/11		Analyzed: 11/22/11	
Specific Conductance (EC)	0.831	0.00100	mmhos/cm	0.894	7.30	20	

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535 16th Street Suite 620
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Project: Brownlee Pit 13-9
Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1111804 - General Preparation

Blank (1111804-BLK1)

Prepared: 11/18/11 Analyzed: 11/20/11

Calcium	ND	2.50	mg/kg
Magnesium	ND	1.00	"
Sodium	ND	5.00	"

LCS (1111804-BS1)

Prepared: 11/18/11 Analyzed: 11/20/11

Calcium	172	2.50	mg/kg	200	86.2	70-130	25
Magnesium	70.9	1.00	"	80.0	88.6	70-130	25
Sodium	411	5.00	"	400	103	70-130	25

LCS Dup (1111804-BSD1)

Prepared: 11/18/11 Analyzed: 11/20/11

Calcium	175	2.50	mg/kg	200	87.7	70-130	1.74	25
Magnesium	76.4	1.00	"	80.0	95.5	70-130	7.46	25
Sodium	447	5.00	"	400	112	70-130	8.32	25

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Denver CO, 80202

Project: Brownlee Pit 13-9

Project Number: [none]
Project Manager: Kristen Stocks

Reported:
12/01/11 14:07

Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

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