FORM 27 Rev 6/99

State of Colorado
Oil and Gas Conservation Commission

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

FOR OGCC USE ONLY

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

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):

GENERAL INFORMATION

OGCC Operator Number: 10071
Name of Operator: Bill Barrett Corporation
Address: 112 Red Feather Trail
City: Silt State: CO Zip: 81652

Contact Name and Telephone
Name: Scott Ghan
No: 970-876-1959
Fax: 970-876-0981

API/Facility No: 05-045-17551
Facility Name: Jolley #4
Well Name: GGU Jolley Federal
Location (QtrQtr, Sec, Twp, Rng, Meridian): NENW 21 6S 91W 6 PM

County: Garfield
Facility Number: 299071
Well Number: 21D-21-691
Latitude: 39.518768 Longitude: -107.561301

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Condensate

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Villa Grove-Zoltay loam, 15 to 30 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): An intermittent drainage is located 2,571 feet southwest; a residence is located 2,883 feet northwest; a water well is located 3,095 feet southwest; depth to water is estimated to be at least 85 feet below ground surface (bgs)

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

Impacted Media (check):	Extent of Impact:	How Determined:
☒ Soils	90' N to S x 5' E to W	Laboratory analysis and field screening of soil samples
☐ Vegetation		
☐ Groundwater		
☐ Surface water		

REMEDIATION WORKPLAN

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

Form 19 submitted on 6/9/2011 (Spill Number 2214308).

Describe how source is to be removed:

A contractor closed an equalizer valve on the condensate tank causing one of the tanks to overflow into the lined containment. A majority of the condensate remained in the lined containment; however, approximately 2 barrels (bbls) of condensate was released onto the pad surface along the northern and eastern edges of the containment. The lined containment was flushed with hot water and detergent to recover any remaining free product via a vacuum truck. The rinsate from this process was transported to a Bill Barrett Corporation salt water disposal facility. All impacted soil outside of the containment was excavated and placed in a lined containment on the pad surface. Four soil samples (SS01, SS02, SS03, and SS05) were collected from the excavated areas and were submitted to a contract laboratory for analysis of Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 metals, electrical conductivity (EC), pH, sodium adsorption ratio (SAR), benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons–gasoline range organics (TPH-GRO), TPH–diesel range organics (TPH-DRO), and polycyclic aromatic hydrocarbons (PAHs). A multi-point composite sample of the ballast material (SS04) was collected from the lined containment and was submitted for analysis of BTEX, TPH-GRO, TPH-DRO, and PAHS. An additional sample was collected from the land farm (stockpile01) and was submitted for analysis of COGCC Table 910-1 metals, EC, pH, SAR, BTEX, TPH-GRO, TPH-DRO, and PAHs. A topographic site location map and site map are provided as Figures 1 and 2. The laboratory analytical reports are provided in Table 1 and laboratory reports are provided as an attachment.

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.:

Approximately 65 cubic yards of impacted soil excavated from the spill area were land farmed within a lined containment onsite. The rinsate generated from flushing the lined containment was transported to a BBC salt water disposal facility.

Submit Page 2 with Page 1.

FORM 27 Rev 6/99

Page 2

State of Colorado
Oil and Gas Conservation Commission

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(303) 894-2100 Fax 894-2109

REMEDIATION WORKPLAN (CONT.)

OGCC Employeee:

Tracking Number:
Name of Operator: Bill Barrett Corporation
OGCC Operator No: 10071
Received Date:
Well Name & No: GGU Jolley Federal 21D-21-691
Facility Name & No.: Jolley #4 299071

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

The possibility of groundwater impact is unlikely as the majority of the released condensate remained in the lined containment. Any fluids which migrated outside the liner were excavated to dry soil. Groundwater was not encountered during excavation activities. Based on the Colorado Division of Water Resources records, static water levels within a three quarter mile radius are estimated to be 85 feet bgs.

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.

The excavations were backfilled with clean fill material to match the existing grade. BBC's production facility remains at the site, so no reclamation activities are necessary at this time.

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 [X] N If yes, describe:

Analytical results for the soil samples collected from the excavations indicated COGCC Table 910-1 metals, EC, SAR, BTEX, TPH-GRO, TPH-DRO, and PAHs were in compliance with COGCC Table 910-1 concentration levels or were within background concentrations encountered at the site. The pH levels for each of the samples collected from the excavations exceeded the COGCC Table 910-1 concentration level. Since the pad surface will not be reclaimed until the wellheads have been plugged and abandoned, revegetation of the drilling pad is not currently a concern at the site. Although it is not listed in the analytical table, a background sample (BG05@8.5') was collected during pit closure activities at the site. Analytical results for soil sample BG05@8.5' indicated an arsenic background concentration of 4.89 milligrams per kilogram. Using this concentration as the site specific arsenic background, arsenic concentrations are compliant. The analytical results for BG05@8.5' are provided as an attachment.

Analytical results for the ballast material composite sample indicated BTEX, TPH-GRO and PAH concentrations were in compliance with COGCC Table 910-1 concentration levels. The TPH-DRO concentration exceeded the COGCC Table 910-1 concentration level. The ballast material within the lined containment was re-sampled (SS06) following additional flushing with hot water and detergent on 9/16/11. Analytical results indicated the TPH-DRO concentration is now in compliance with the COGCC Table 910-1 concentration level.

The land farm sample analytical results indicated COGCC Table 910-1 metals, EC, SAR, BTEX, TPH-GRO, and PAHs were in compliance with COGCC Table 910-1 concentration levels or were within background concentrations encountered at the site. The land farm was re-sampled (Stockpile02) on 9/16/11 due to a non-compliant TPH-DRO concentration. Analytical results indicated the TPH-DRO concentration in soil sample Stockpile02 is now compliant with the COGCC Table 910-1 concentration level.

The pH level for the land farm exceeded the COGCC Table 910-1 concentration level at 9.62. Although pH is a parameter used to ensure proper reclamation of disturbed areas, a limited exceedance of this parameter will not likely affect reclamation, as the land farmed soil will be buried below the vegetative root zone during on-site pit closure activities. As all materials that contacted the release have been remediated and analytical results confirm the land farmed soil is now compliant, BBC is requesting a No Further Action Determination for this site.

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

Approximately 65 cubic yards of impacted soil excavated from the spill area are currently being land farmed within a lined containment onsite. The rinsate generated from flushing the lined containment was transported to a BBC salt water disposal facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	5/30/2011	Date Site Investigation Completed:	9/16/2011	Remediation Plan Submitted:	6/14/2012
Remediation Start Date:	5/30/2011	Anticipated Completion Date:	NA	Actual Completion Date:	9/16/2011

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

Print Name: Scott Ghan

Signed: _____ Title: **E H & S Coordinator** Date: **6/14/2012**

OGCC Approved: _____ Title: _____ Date: _____

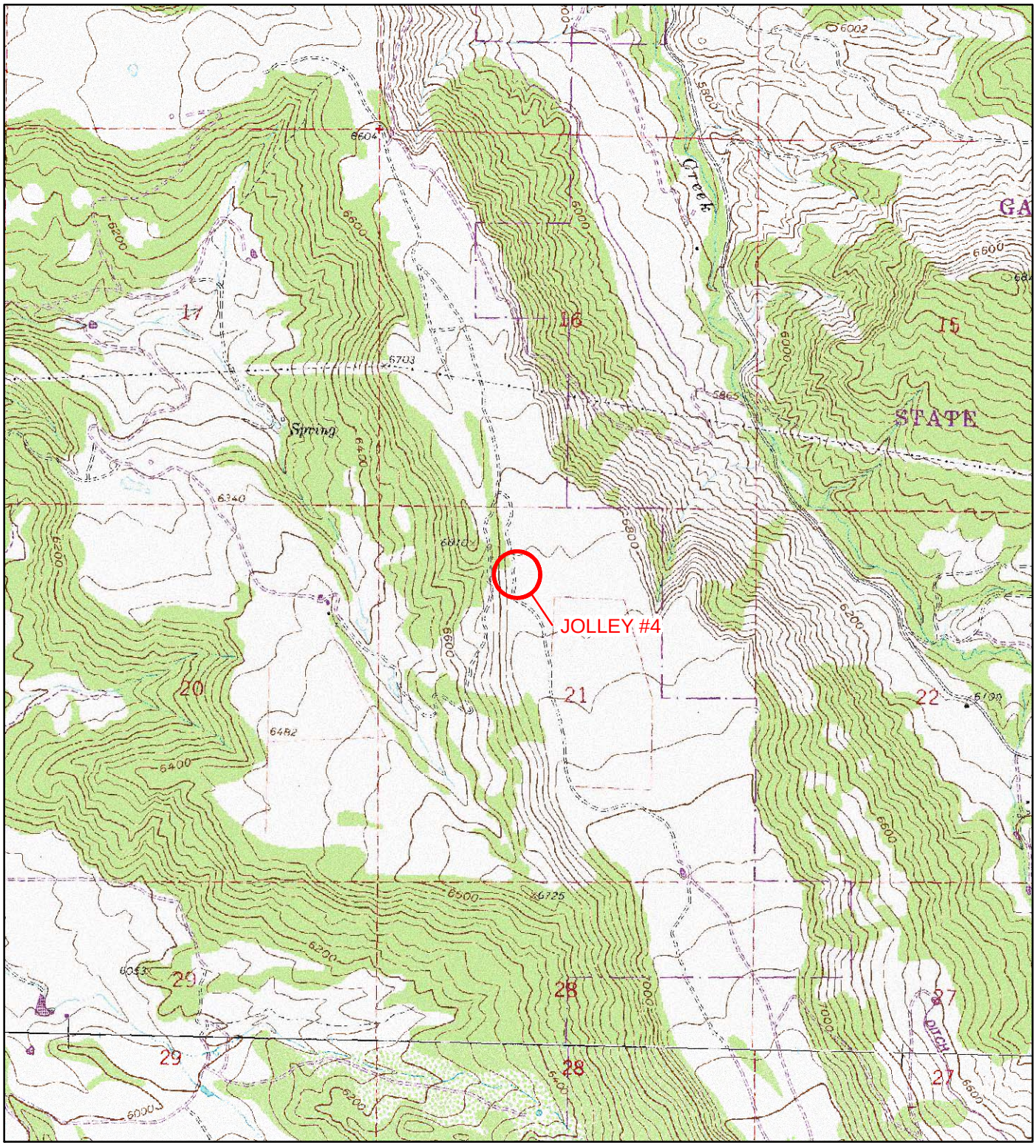


IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

LEGEND

○ SITE LOCATION

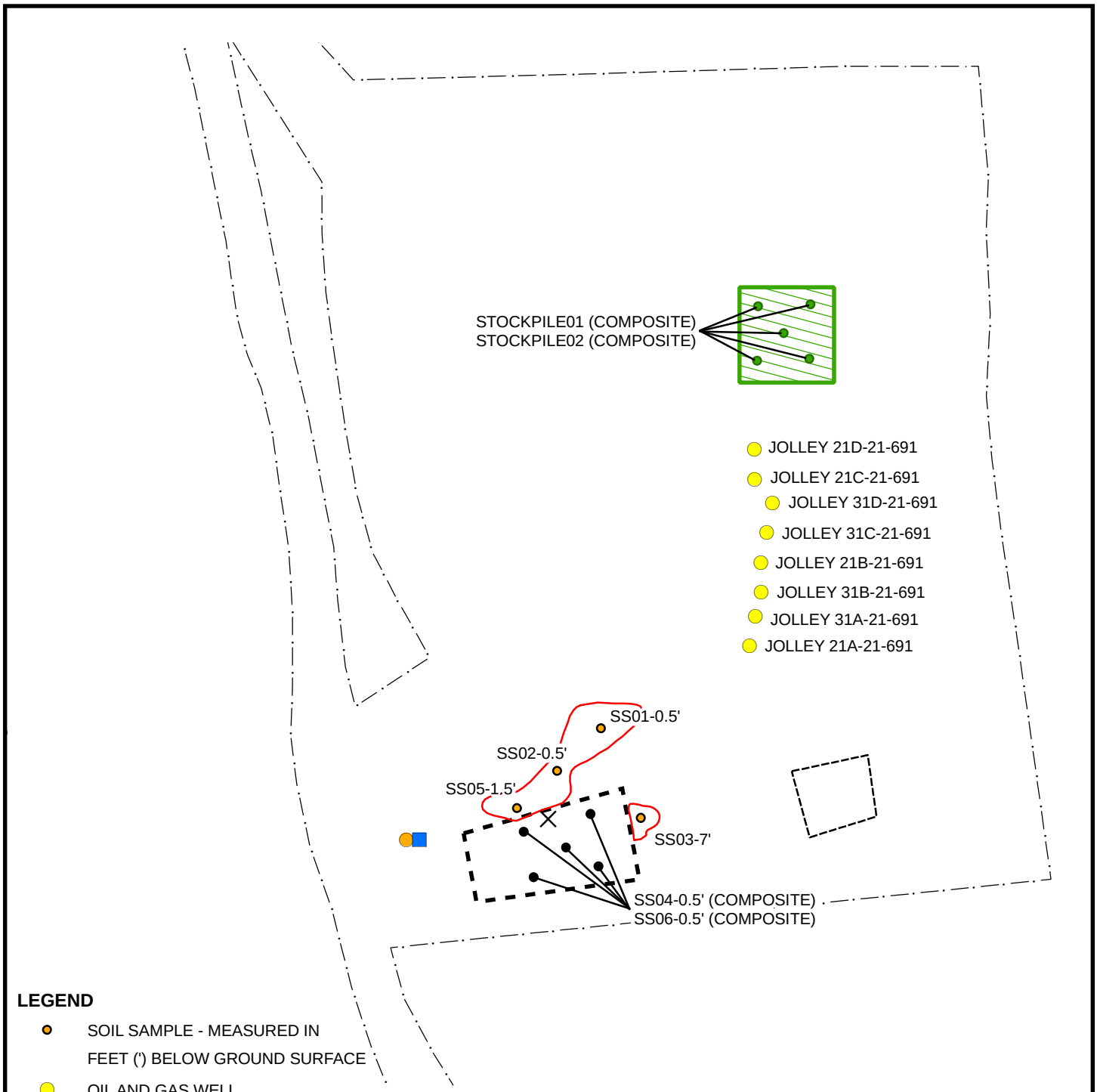
0 2,000 4,000

Feet

N

FIGURE 1
SITE LOCATION MAP
JOLLEY # 4
NENW SEC 21 T6S R91W
GARFIELD COUNTY, COLORADO
BILL BARRETT CORPORATION

P:\Bill Barrett Corp\GIS\MXD\027311022 JOLLEY\027311022_FIG_01_SL.mxd



LEGEND

- SOIL SAMPLE - MEASURED IN FEET (') BELOW GROUND SURFACE
- OIL AND GAS WELL
- DRIP VESSEL
- FLARE STACK
- RELEASE LOCATION
- ALIQUOT SAMPLE (STOCKPILE01)
- ALIQUOT SAMPLE (SS04-05')
- PAD PERIMETER
- EXTENT OF RELEASE
- SEPARATORS
- AST CONTAINMENT
- SOIL STOCKPILE

0 80 160
Feet

N

FIGURE 2
SITE MAP
JOLLEY # 4
NENW SEC 21 T6S R91W
GARFIELD COUNTY, COLORADO
BILL BARRETT CORPORATION

P:\Bill Barrett Corp\GIS\MXD\027311022 JOLLEY\027311022_FIG_02_SITE_MAP.mxd

TABLE 1
SOIL ANALYTICAL RESULTS
JOLLEY #4 (API No. 05-045-17551)
GARFIELD COUNTY, COLORADO
BILL BARRETT CORPORATION

Parameter	Standard	SS01	SS02	SS03	SS04
Depth (feet)		0.5	0.5	6	0.5
Sample Date		6/7/2011	6/7/2011	6/7/2011	6/6/2011
Inorganics					
Electrical Conductivity (mmhos/cm)	4	0.292	0.455	0.17	0.06
SAR (ratio)	12	2.15	2.47	0.700	
pH, Lab (su)	6 to 9	**9.66**	**9.53**	**9.49**	**9.01**
Metals					
Arsenic (mg/kg)	0.39	**2.9**	**2.4**	**3.7**	
Barium (mg/kg)	15000	130	207	133	
Cadmium (mg/kg)	70	<1.2	<1.1	<1.1	
Chromium (mg/kg)		7.0	4.7	7.0	
Chromium+3 Calculated (mg/kg)	120000	7.0	4.4	6.7	
Chromium, Hexavalent (mg/kg)	23	<0.49	<0.43	<0.44	
Copper (mg/kg)	3100	8.8	7.5	9.1	
Lead (mg/kg)	400	<5.9	<5.7	6.4	
Mercury (mg/kg)	23	<0.10	<0.097	<0.10	
Nickel (mg/kg)	1600	22.6	11.0	17.7	
Selenium (mg/kg)	390	<5.9	<5.7	<5.6	
Silver (mg/kg)	390	<3.6	<3.4	<3.4	
Zinc (mg/kg)	23000	20.7	17.0	22.5	
Organic Compounds					
TPH-DRO (mg/kg)		<16	37.6	13.8	1910
TPH-GRO (mg/kg)		<14	<11	<12	<10
TPH-Total (mg/kg)	500	<30	37.6	13.8	**1910**
Benzene (mg/kg)	0.17	<0.071	<0.057	<0.06	<0.052
Toluene (mg/kg)	85	<0.14	<0.11	<0.12	0.109
Ethylbenzene (mg/kg)	100	<0.14	<0.11	<0.12	0.0434 J
Xylenes, Total (mg/kg)	175	<0.28	<0.23	<0.24	0.455
Acenaphthene (mg/kg)	1000	0.0081	<0.036	<0.015	0.0596 J
Anthracene (mg/kg)	1000	0.0081	<0.036	<0.015	<0.061
Benzo (a) anthracene (mg/kg)	0.22	<0.02	<0.09	<0.037	<0.15
Benzo (b) fluoranthene (mg/kg)	0.22	<0.02	<0.09	<0.037	<0.15
Benzo (k) fluoranthene (mg/kg)	2.2	<0.02	<0.09	<0.037	<0.15
Benzo (a) pyrene (mg/kg)	0.022	<0.02	<0.09	<0.037	<0.15
Chrysene (mg/kg)	22	<0.02	<0.09	<0.037	0.121 J
Dibenz (a,h) anthracene (mg/kg)	0.022	<0.02	<0.09	<0.037	<0.15
Fluoranthene (mg/kg)	1000	0.0081	<0.036	<0.015	<0.061
Fluorene (mg/kg)	1000	0.0081	<0.036	<0.015	0.746
Indeno (1,2,3-cd) pyrene (mg/kg)	0.22	<0.024	<0.11	<0.044	<0.18
Naphthalene (mg/kg)	23	0.0081	<0.036	<0.015	0.159
Pyrene (mg/kg)	1000	0.0081	<0.036	<0.015	<0.061

TABLE 1 (Continued)
SOIL ANALYTICAL RESULTS
JOLLEY #4 (API No. 05-045-17551)
GARFIELD COUNTY, COLORADO
BILL BARRETT CORPORATION

Parameter	Standard	SS05	SS06	Stockpile 01	Stockpile 02
Depth (feet)		1.5	0.5	0.5	0.5
Sample Date		6/7/2011	9/16/2011	6/7/2011	9/16/2011
Inorganics					
Electrical Conductivity (mmhos/cm)	4	0.156		0.57	
SAR (ratio)	12	0.679		4.51	
pH, Lab (su)	6 to 9	**9.69**		**9.62**	
Metals					
Arsenic (mg/kg)	0.39	**4.0**		**3.4**	
Barium (mg/kg)	15000	206		192	
Cadmium (mg/kg)	70	<1.2		<1.1	
Chromium (mg/kg)		8.5		7.4	
Chromium+3 Calculated (mg/kg)	120000	8.2		7.0	
Chromium, Hexavalent (mg/kg)	23	<0.46		<0.42	
Copper (mg/kg)	3100	10.9		8.6	
Lead (mg/kg)	400	7.2		6.5	
Mercury (mg/kg)	23	<0.11		<0.10	
Nickel (mg/kg)	1600	19.6		14.5	
Selenium (mg/kg)	390	<5.9		<5.3	
Silver (mg/kg)	390	<3.5		<3.2	
Zinc (mg/kg)	23000	26.1		23.0	
Organic Compounds					
TPH-DRO (mg/kg)		<15	31	1330	70
TPH-GRO (mg/kg)		<13		139	<0.050
TPH-Total (mg/kg)	500	<28		**1469**	
Benzene (mg/kg)	0.17	<0.065		<0.058	
Toluene (mg/kg)	85	<0.13		0.0904 J	
Ethylbenzene (mg/kg)	100	<0.13		<0.12	
Xylenes, Total (mg/kg)	175	<0.26		3.68	
Acenaphthene (mg/kg)	1000	<0.015		0.041	
Anthracene (mg/kg)	1000	<0.015		<0.014	
Benzo (a) anthracene (mg/kg)	0.22	<0.039		<0.036	
Benzo (b) fluoranthene (mg/kg)	0.22	<0.039		<0.036	
Benzo (k) fluoranthene (mg/kg)	2.2	<0.039		<0.036	
Benzo (a) pyrene (mg/kg)	0.022	<0.039		<0.036	
Chrysene (mg/kg)	22	<0.039		0.0452	
Dibenz (a,h) anthracene (mg/kg)	0.022	<0.039		<0.036	
Fluoranthene (mg/kg)	1000	<0.015		0.0168	
Fluorene (mg/kg)	1000	<0.015		0.494	
Indeno (1,2,3-cd) pyrene (mg/kg)	0.22	<0.046		<0.043	
Naphthalene (mg/kg)	23	<0.015		0.226	
Pyrene (mg/kg)	1000	<0.015		0.0561	

TABLE 1 (Continued)
SOIL ANALYTICAL RESULTS
JOLLEY #4 (API No. 05-045-17551)
GARFIELD COUNTY, COLORADO
BILL BARRETT CORPORATION

Parameter	Standard	SS05	SS06	Stockpile 01	Stockpile 02
Depth (feet)		1.5	0.5	0.5	0.5
Sample Date		6/7/2011	9/16/2011	6/7/2011	9/16/2011

Notes:

< - less than stated laboratory reporting limit
Bold indicates result is equal to or exceeds the applicable standard
Basic Standards for Soil are from 2 CCR 404-1, Table 910-1, effective April 2009
GRO - Gasoline range organics
TPH-Total - sum of TPH-GRO and TPH-DRO
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
TPH - Total petroleum hydrocarbons (C6-C28)
DRO - Diesel range organics
SAR - Sodium adsorption ratio

Mountain States ACCUTEST LABORATORIES

06/16/11

Technical Report for

LT Environmental

Jolley #4 Release

0273-11022

Accutest Job Number: D24149

Sampling Dates: 06/06/11 - 06/07/11

Report to:

LT Environmental

bdodek@ltenv.com

ATTN: Brian Dodek

Total number of pages in report: **58**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

John Hamilton
Laboratory Director

Client Service contact: 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

Test results relate only to samples analyzed.

Sections: 1 2 3 4

Table of Contents

Sample Summary

LT Environmental

Job No: D24149

Jolley #4 Release
Project No: 0273-11022

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D24149-1	06/07/11	11:34	AW	06/08/11	SO	Sludge	STOCKPILE01
D24149-1A	06/07/11	11:34	AW	06/08/11	SO	Sludge	STOCKPILE01
D24149-2	06/07/11	10:55	AW	06/08/11	SO	Sludge	SS01-0.5'
D24149-2A	06/07/11	10:55	AW	06/08/11	SO	Sludge	SS01-0.5'
D24149-3	06/07/11	10:48	AW	06/08/11	SO	Sludge	SS02-0.5'
D24149-3A	06/07/11	10:48	AW	06/08/11	SO	Sludge	SS02-0.5'
D24149-4	06/07/11	09:57	AW	06/08/11	SO	Sludge	SS03-6'
D24149-4A	06/07/11	09:57	AW	06/08/11	SO	Sludge	SS03-6'
D24149-5	06/06/11	14:20	AW	06/08/11	SO	Sludge	SS04-0.5'
D24149-6	06/07/11	11:06	AW	06/08/11	SO	Sludge	SS05-1.5'
D24149-6A	06/07/11	11:06	AW	06/08/11	SO	Sludge	SS05-1.5'

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	LT Environmental	**Job No**	D24149
Site:	Jolley #4 Release	**Report Dat**	6/16/2011 2:22:10 PM

On 06/08/2011, six (6) samples, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 3.9°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D24149 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** V3V680

- All samples were analyzed within the recommended method holding time.
- Samples D24162-1MS and D24162-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Matrix SO **Batch ID:** V3V689

- All samples were analyzed within the recommended method holding time.
- Samples D24046-1MS and D24046-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP3826

- All samples were extracted and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D24150-1MS and D24150-1MSD were used as the QC samples indicated.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of numerous analytes are outside control limits. Probable cause due to matrix interference. Refer to the lab control or spike blank for recovery information.
- The RPDs for the MS and MSD recoveries of Fluoranthene and Pyrene are outside control limits for sample OP3826-MSD. The high RPD is due to possible sample nonhomogeneity.
- Samples D24149-3, D24149-4, and D24149-6: The reporting limits (RL) were raised due to matrix interference.

Volatiles by GC By Method SW846 8015B

Matrix SO **Batch ID:** GGA659

- All samples were analyzed within the recommended method holding time.
- Samples D24238-1MS and D24238-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Matrix SO **Batch ID:** GGA660

- All samples were analyzed within the recommended method holding time.
- Samples D24149-4MS and D24149-4MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP3828

- All samples were extracted and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D24249-1MS and D24249-1MSD were used as the QC samples indicated.

Metals By Method SW846 6010B

Matrix AQ **Batch ID:** MP4904

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.

Matrix SO **Batch ID:** MP4910

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D24242-1MS, D24242-1MSD, and D24242-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPDs for Cadmium, Chromium, Copper, Nickel, Silver, and Zinc are outside control limits for sample MP4910-SD1. The percent differences are acceptable for Cadmium and Silver due to low initial sample concentration (< 50 times IDL).
- MP4910-SD1 for Chromium, Copper, Nickel, and Zinc: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix SO **Batch ID:** MP4911

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D24242-1MS, D24242-1MSD, and D24242-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD for Arsenic is outside control limits for sample MP4911-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 7471A

Matrix SO **Batch ID:** MP4914

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D24031-1MS and D24031-1MSD were used as the QC samples for the Mercury analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO **Batch ID:** GN9933

- Sample D24150-1DUP was used as the QC sample for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method DEPT.OF AG, BOOK N9

Matrix SO **Batch ID:** GP4632

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.

Wet Chemistry By Method SM19 2540B M

Matrix SO **Batch ID:** GN9969

- The data for SM19 2540B M meets quality control requirements.

Wet Chemistry By Method SW846 3060/7196A M

Matrix	SO	Batch ID:	R7793

- The data for SW846 3060/7196A M meets quality control requirements.
- Trivalent Chromium: Calculated as: (Chromium) - (Hexavalent Chromium)

Wet Chemistry By Method SW846 3060A/7196A

Matrix	SO	Batch ID:	M:GP13073

- The data for SW846 3060A/7196A meets quality control requirements.
- Hexavalent Chromium: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method SW846 9045C

Matrix	SO	Batch ID:	GN9916

- The following sample wase run outside of holding time for method SW846 9045C: D24149-5.

Wet Chemistry By Method USDA HANDBOOK 60

Matrix	SO	Batch ID:	MP4904

- Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Accutest Mountain States	**Job No**	D24149
Site:	LTENCODE: Jolly 4	**Report Date**	6/14/2011 2:49:10 PM

5 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 06/07/2011 and were received at Accutest on 06/08/2011 properly preserved, at 1.6 Deg. C and intact. These Samples received an Accutest job number of D24149. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO **Batch ID:** GP13073

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D24149-5MS, D24149-5DUP were used as the QC samples for Chromium, Hexavalent.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP13073-D1. RPD acceptable due to low duplicate and sample concentrations.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D24149).

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	STOCKPILE01		
Lab Sample ID:	D24149-1	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8260B	**Percent Solids:**	92.6
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V12117.D	1	06/10/11	DC	n/a	n/a	V3V680
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.01 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	58	25	ug/kg	
108-88-3	Toluene	90.4	120	58	ug/kg	J
100-41-4	Ethylbenzene	ND	120	29	ug/kg	
1330-20-7	Xylene (total)	3680	230	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%
17060-07-0	1,2-Dichloroethane-D4	85%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STOCKPILE01		
Lab Sample ID:	D24149-1	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	92.6
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G04316.D	2	06/09/11	TMB	06/09/11	OP3826	E3G163
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	41.0	14	12	ug/kg	
120-12-7	Anthracene	ND	14	13	ug/kg	
56-55-3	Benzo(a)anthracene	ND	36	19	ug/kg	
50-32-8	Benzo(a)pyrene	ND	36	26	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	36	27	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	36	16	ug/kg	
218-01-9	Chrysene	45.2	36	16	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	36	27	ug/kg	
206-44-0	Fluoranthene	16.8	14	14	ug/kg	
86-73-7	Fluorene	494	14	12	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	43	40	ug/kg	
91-20-3	Naphthalene	226	14	14	ug/kg	
129-00-0	Pyrene	56.1	14	14	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	110%		10-193%
321-60-8	2-Fluorobiphenyl	63%		20-138%
1718-51-0	Terphenyl-d14	69%		17-174%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STOCKPILE01		
Lab Sample ID:	D24149-1	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8015B	**Percent Solids:**	92.6
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA12114.D	1	06/12/11	SK	n/a	n/a	GGA659
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	139	12	5.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	109%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STOCKPILE01		
Lab Sample ID:	D24149-1	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846-8015B SW846 3546	**Percent Solids:**	92.6
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD06963.D	1	06/10/11	JB	06/10/11	OP3828	GFD304
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1330	14	9.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		61-142%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STOCKPILE01		
Lab Sample ID:	D24149-1	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	92.6
Project:	Jolley #4 Release		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.4	0.42	mg/kg	5	06/10/11	06/10/11	GJ	SW846 6020 [2]	SW846 3050B [5]
Barium	192	2.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Cadmium	< 1.1	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Chromium	7.4	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Copper	8.6	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Lead	6.5	5.3	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Mercury	< 0.10	0.10	mg/kg	1	06/13/11	06/13/11	JY	SW846 7471A [3]	SW846 7471A [6]
Nickel	14.5	3.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Selenium	< 5.3	5.3	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Silver	< 3.2	3.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Zinc	23.0	3.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA1584
(2) Instrument QC Batch: MA1585
(3) Instrument QC Batch: MA1586
(4) Prep QC Batch: MP4910
(5) Prep QC Batch: MP4911
(6) Prep QC Batch: MP4914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	STOCKPILE01		
Lab Sample ID:	D24149-1	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	92.6
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 0.42	0.42	mg/kg	1	06/10/11 16:30	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	7.0	1.5	mg/kg	1	06/10/11 16:30	AMA	SW846 3060/7196A M
Redox Potential Vs H2	393		mv	1	06/09/11 14:00	JK	ASTM D1498-76M
Solids, Percent	92.6		%	1	06/13/11	SWT	SM19 2540B M
Specific Conductivity	570	1.0	umhos/cm	1	06/10/11	JK	DEPT.OF AG, BOOK N9
pH	9.62		su	1	06/08/11 15:00	CJ	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	STOCKPILE01		
Lab Sample ID:	D24149-1A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	92.6
Project:	Jolley #4 Release		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	22.2	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Magnesium	6.89	1.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Sodium	95.0	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA1584
(2) Prep QC Batch: MP4904

RL = Reporting Limit

Report of Analysis

Client Sample ID:	STOCKPILE01		
Lab Sample ID:	D24149-1A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	92.6
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	4.51		ratio	1	06/10/11 19:02	GJ	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS01-0.5'		
Lab Sample ID:	D24149-2	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8260B	**Percent Solids:**	82.0
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V12118.D	1	06/10/11	DC	n/a	n/a	V3V680
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.11 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	71	31	ug/kg	
108-88-3	Toluene	ND	140	71	ug/kg	
100-41-4	Ethylbenzene	ND	140	35	ug/kg	
1330-20-7	Xylene (total)	ND	280	140	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	87%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%
17060-07-0	1,2-Dichloroethane-D4	83%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS01-0.5'		
Lab Sample ID:	D24149-2	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	82.0
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G04317.D	1	06/09/11	TMB	06/09/11	OP3826	E3G163
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	8.1	6.5	ug/kg	
120-12-7	Anthracene	ND	8.1	7.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	20	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	20	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	20	15	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	20	8.9	ug/kg	
218-01-9	Chrysene	ND	20	8.9	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	20	15	ug/kg	
206-44-0	Fluoranthene	ND	8.1	8.1	ug/kg	
86-73-7	Fluorene	ND	8.1	6.9	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	24	22	ug/kg	
91-20-3	Naphthalene	ND	8.1	7.7	ug/kg	
129-00-0	Pyrene	ND	8.1	7.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	64%		10-193%
321-60-8	2-Fluorobiphenyl	53%		20-138%
1718-51-0	Terphenyl-d14	79%		17-174%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS01-0.5'		
Lab Sample ID:	D24149-2	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8015B	**Percent Solids:**	82.0
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA12115.D	1	06/12/11	SK	n/a	n/a	GGA659
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	14	7.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	88%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS01-0.5'		
Lab Sample ID:	D24149-2	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846-8015B SW846 3546	**Percent Solids:**	82.0
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD06964.D	1	06/10/11	JB	06/10/11	OP3828	GFD304
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	16	11	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		61-142%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS01-0.5'		
Lab Sample ID:	D24149-2	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	82.0
Project:	Jolley #4 Release		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.9	0.47	mg/kg	5	06/10/11	06/10/11	GJ	SW846 6020 [2]	SW846 3050B [5]
Barium	130	2.4	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Cadmium	< 1.2	1.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Chromium	7.0	1.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Copper	8.8	1.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Lead	< 5.9	5.9	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Mercury	< 0.10	0.10	mg/kg	1	06/13/11	06/13/11	JY	SW846 7471A [3]	SW846 7471A [6]
Nickel	22.6	3.6	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Selenium	< 5.9	5.9	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Silver	< 3.6	3.6	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Zinc	20.7	3.6	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA1584
(2) Instrument QC Batch: MA1585
(3) Instrument QC Batch: MA1586
(4) Prep QC Batch: MP4910
(5) Prep QC Batch: MP4911
(6) Prep QC Batch: MP4914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS01-0.5'		
Lab Sample ID:	D24149-2	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	82.0
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 0.49	0.49	mg/kg	1	06/10/11 16:30	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	7.0	1.7	mg/kg	1	06/10/11 16:30	AMA	SW846 3060/7196A M
Redox Potential Vs H2	404		mv	1	06/09/11 14:00	JK	ASTM D1498-76M
Solids, Percent	82		%	1	06/13/11	SWT	SM19 2540B M
Specific Conductivity	292	1.0	umhos/cm	1	06/10/11	JK	DEPT.OF AG, BOOK N9
pH	9.66		su	1	06/08/11 15:00	CJ	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS01-0.5'		
Lab Sample ID:	D24149-2A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	82.0
Project:	Jolley #4 Release		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	45.6	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Magnesium	5.03	1.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Sodium	57.5	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA1584
(2) Prep QC Batch: MP4904

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS01-0.5'		
Lab Sample ID:	D24149-2A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	82.0
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	2.15		ratio	1	06/10/11 19:09	GJ	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS02-0.5'		
Lab Sample ID:	D24149-3	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8260B	**Percent Solids:**	92.4
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V12119.D	1	06/10/11	DC	n/a	n/a	V3V680
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.08 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	57	25	ug/kg	
108-88-3	Toluene	ND	110	57	ug/kg	
100-41-4	Ethylbenzene	ND	110	29	ug/kg	
1330-20-7	Xylene (total)	ND	230	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	90%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%
17060-07-0	1,2-Dichloroethane-D4	84%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS02-0.5'		
Lab Sample ID:	D24149-3	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	92.4
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3G04318.D	5	06/09/11	TMB	06/09/11	OP3826	E3G163
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	36	29	ug/kg	
120-12-7	Anthracene	ND	36	32	ug/kg	
56-55-3	Benzo(a)anthracene	ND	90	47	ug/kg	
50-32-8	Benzo(a)pyrene	ND	90	65	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	90	67	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	90	40	ug/kg	
218-01-9	Chrysene	ND	90	40	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	90	67	ug/kg	
206-44-0	Fluoranthene	ND	36	36	ug/kg	
86-73-7	Fluorene	ND	36	31	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	110	99	ug/kg	
91-20-3	Naphthalene	ND	36	34	ug/kg	
129-00-0	Pyrene	ND	36	34	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		10-193%
321-60-8	2-Fluorobiphenyl	59%		20-138%
1718-51-0	Terphenyl-d14	83%		17-174%

(a) Elevated RL due to matrix interference.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS02-0.5'		
Lab Sample ID:	D24149-3	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8015B	**Percent Solids:**	92.4
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA12116.D	1	06/12/11	SK	n/a	n/a	GGA659
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	11	5.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	86%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS02-0.5'		
Lab Sample ID:	D24149-3	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846-8015B SW846 3546	**Percent Solids:**	92.4
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD06965.D	1	06/10/11	JB	06/10/11	OP3828	GFD304
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	37.6	14	9.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	100%		61-142%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS02-0.5'		
Lab Sample ID:	D24149-3	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	92.4
Project:	Jolley #4 Release		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.4	0.46	mg/kg	5	06/10/11	06/11/11	GJ	SW846 6020 [2]	SW846 3050B [5]
Barium	207	2.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Cadmium	< 1.1	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Chromium	4.7	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Copper	7.5	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Lead	< 5.7	5.7	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Mercury	< 0.097	0.097	mg/kg	1	06/13/11	06/13/11	JY	SW846 7471A [3]	SW846 7471A [6]
Nickel	11.0	3.4	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Selenium	< 5.7	5.7	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Silver	< 3.4	3.4	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Zinc	17.0	3.4	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA1584
(2) Instrument QC Batch: MA1585
(3) Instrument QC Batch: MA1586
(4) Prep QC Batch: MP4910
(5) Prep QC Batch: MP4911
(6) Prep QC Batch: MP4914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS02-0.5'		
Lab Sample ID:	D24149-3	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	92.4
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 0.43	0.43	mg/kg	1	06/10/11 16:30	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	4.4	1.5	mg/kg	1	06/10/11 16:30	AMA	SW846 3060/7196A M
Redox Potential Vs H2	448		mv	1	06/09/11 14:00	JK	ASTM D1498-76M
Solids, Percent	92.4		%	1	06/13/11	SWT	SM19 2540B M
Specific Conductivity	455	1.0	umhos/cm	1	06/10/11	JK	DEPT.OF AG, BOOK N9
pH	9.53		su	1	06/08/11 15:00	CJ	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS02-0.5'		
Lab Sample ID:	D24149-3A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	92.4
Project:	Jolley #4 Release		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	38.7	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Magnesium	9.16	1.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Sodium	65.9	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA1584
(2) Prep QC Batch: MP4904

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS02-0.5'		
Lab Sample ID:	D24149-3A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	92.4
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	2.47		ratio	1	06/10/11 19:15	GJ	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS03-6'		
Lab Sample ID:	D24149-4	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8260B	**Percent Solids:**	90.4
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V12120.D	1	06/10/11	DC	n/a	n/a	V3V680
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.08 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	60	26	ug/kg	
108-88-3	Toluene	ND	120	60	ug/kg	
100-41-4	Ethylbenzene	ND	120	30	ug/kg	
1330-20-7	Xylene (total)	ND	240	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	89%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%
17060-07-0	1,2-Dichloroethane-D4	85%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS03-6'		
Lab Sample ID:	D24149-4	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	90.4
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3G04319.D	2	06/09/11	TMB	06/09/11	OP3826	E3G163
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	15	12	ug/kg	
120-12-7	Anthracene	ND	15	13	ug/kg	
56-55-3	Benzo(a)anthracene	ND	37	19	ug/kg	
50-32-8	Benzo(a)pyrene	ND	37	26	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	37	27	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	37	16	ug/kg	
218-01-9	Chrysene	ND	37	16	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	37	27	ug/kg	
206-44-0	Fluoranthene	ND	15	15	ug/kg	
86-73-7	Fluorene	ND	15	12	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	44	40	ug/kg	
91-20-3	Naphthalene	ND	15	14	ug/kg	
129-00-0	Pyrene	ND	15	14	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	64%		10-193%
321-60-8	2-Fluorobiphenyl	56%		20-138%
1718-51-0	Terphenyl-d14	80%		17-174%

(a) Elevated RL due to matrix interference.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS03-6'		
Lab Sample ID:	D24149-4	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8015B	**Percent Solids:**	90.4
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA12120.D	1	06/12/11	SK	n/a	n/a	GGA660
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS03-6'		
Lab Sample ID:	D24149-4	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846-8015B SW846 3546	**Percent Solids:**	90.4
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD06966.D	1	06/10/11	JB	06/10/11	OP3828	GFD304
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	13.8	15	9.6	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	94%		61-142%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS03-6'		
Lab Sample ID:	D24149-4	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	90.4
Project:	Jolley #4 Release		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.7	0.45	mg/kg	5	06/10/11	06/11/11	GJ	SW846 6020 [2]	SW846 3050B [5]
Barium	133	2.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Cadmium	< 1.1	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Chromium	7.0	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Copper	9.1	1.1	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Lead	6.4	5.6	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Mercury	< 0.10	0.10	mg/kg	1	06/13/11	06/13/11	JY	SW846 7471A [3]	SW846 7471A [6]
Nickel	17.7	3.4	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Selenium	< 5.6	5.6	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Silver	< 3.4	3.4	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Zinc	22.5	3.4	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA1584
(2) Instrument QC Batch: MA1585
(3) Instrument QC Batch: MA1586
(4) Prep QC Batch: MP4910
(5) Prep QC Batch: MP4911
(6) Prep QC Batch: MP4914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS03-6'		
Lab Sample ID:	D24149-4	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	90.4
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 0.44	0.44	mg/kg	1	06/10/11 16:30	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	6.7	1.5	mg/kg	1	06/10/11 16:30	AMA	SW846 3060/7196A M
Redox Potential Vs H2	406		mv	1	06/09/11 14:00	JK	ASTM D1498-76M
Solids, Percent	90.4		%	1	06/13/11	SWT	SM19 2540B M
Specific Conductivity	170	1.0	umhos/cm	1	06/10/11	JK	DEPT.OF AG, BOOK N9
pH	9.49		su	1	06/08/11 15:00	CJ	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS03-6'		
Lab Sample ID:	D24149-4A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	90.4
Project:	Jolley #4 Release		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	53.6	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Magnesium	6.46	1.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Sodium	20.4	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA1584
(2) Prep QC Batch: MP4904

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS03-6'		
Lab Sample ID:	D24149-4A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	90.4
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	0.700		ratio	1	06/10/11 19:21	GJ	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS04-0.5'		
Lab Sample ID:	D24149-5	**Date Sampled:**	06/06/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8260B	**Percent Solids:**	99.7
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V12288.D	1	06/15/11	DC	n/a	n/a	V3V689
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.87 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	52	23	ug/kg	
108-88-3	Toluene	109	100	52	ug/kg	
100-41-4	Ethylbenzene	43.4	100	26	ug/kg	J
1330-20-7	Xylene (total)	455	210	100	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	91%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%
17060-07-0	1,2-Dichloroethane-D4	86%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS04-0.5'		
Lab Sample ID:	D24149-5	**Date Sampled:**	06/06/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	99.7
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G04320.D	10	06/09/11	TMB	06/09/11	OP3826	E3G163
Run #2							

	Initial Weight	Final Volume
Run #1	32.9 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	59.6	61	49	ug/kg	J
120-12-7	Anthracene	ND	61	55	ug/kg	
56-55-3	Benzo(a)anthracene	ND	150	79	ug/kg	
50-32-8	Benzo(a)pyrene	ND	150	110	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	150	110	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	150	67	ug/kg	
218-01-9	Chrysene	121	150	67	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	150	110	ug/kg	
206-44-0	Fluoranthene	ND	61	61	ug/kg	
86-73-7	Fluorene	746	61	52	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	180	170	ug/kg	
91-20-3	Naphthalene	159	61	58	ug/kg	
129-00-0	Pyrene	ND	61	58	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	94%		10-193%
321-60-8	2-Fluorobiphenyl	84%		20-138%
1718-51-0	Terphenyl-d14	93%		17-174%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS04-0.5'		
Lab Sample ID:	D24149-5	**Date Sampled:**	06/06/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8015B	**Percent Solids:**	99.7
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA12123.D	1	06/12/11	SK	n/a	n/a	GGA660
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.9 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.2	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS04-0.5'		
Lab Sample ID:	D24149-5	**Date Sampled:**	06/06/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846-8015B SW846 3546	**Percent Solids:**	99.7
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD06967.D	1	06/10/11	JB	06/10/11	OP3828	GFD304
Run #2							

	Initial Weight	Final Volume
Run #1	16.2 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1910	25	16	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		61-142%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS04-0.5'		
Lab Sample ID:	D24149-5	**Date Sampled:**	06/06/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	99.7
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Redox Potential Vs H2	411		mv	1	06/09/11 14:00	JK	ASTM D1498-76M
Solids, Percent	99.7		%	1	06/13/11	SWT	SM19 2540B M
Specific Conductivity	60.0	1.0	umhos/cm	1	06/10/11	JK	DEPT.OF AG, BOOK N9
pH	9.01		su	1	06/08/11 15:00	CJ	SW846 9045C

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS05-1.5'		
Lab Sample ID:	D24149-6	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8260B	**Percent Solids:**	86.1
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V12121.D	1	06/10/11	DC	n/a	n/a	V3V680
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.11 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	65	29	ug/kg	
108-88-3	Toluene	ND	130	65	ug/kg	
100-41-4	Ethylbenzene	ND	130	32	ug/kg	
1330-20-7	Xylene (total)	ND	260	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	92%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%
17060-07-0	1,2-Dichloroethane-D4	85%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS05-1.5'		
Lab Sample ID:	D24149-6	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	86.1
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3G04321.D	2	06/09/11	TMB	06/09/11	OP3826	E3G163
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	15	12	ug/kg	
120-12-7	Anthracene	ND	15	14	ug/kg	
56-55-3	Benzo(a)anthracene	ND	39	20	ug/kg	
50-32-8	Benzo(a)pyrene	ND	39	28	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	39	29	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	39	17	ug/kg	
218-01-9	Chrysene	ND	39	17	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	39	29	ug/kg	
206-44-0	Fluoranthene	ND	15	15	ug/kg	
86-73-7	Fluorene	ND	15	13	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	46	43	ug/kg	
91-20-3	Naphthalene	ND	15	15	ug/kg	
129-00-0	Pyrene	ND	15	15	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%		10-193%
321-60-8	2-Fluorobiphenyl	49%		20-138%
1718-51-0	Terphenyl-d14	72%		17-174%

(a) Elevated RL due to matrix interference.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS05-1.5'		
Lab Sample ID:	D24149-6	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846 8015B	**Percent Solids:**	86.1
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA12124.D	1	06/12/11	SK	n/a	n/a	GGA660
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.5	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	87%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS05-1.5'		
Lab Sample ID:	D24149-6	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
Method:	SW846-8015B SW846 3546	**Percent Solids:**	86.1
Project:	Jolley #4 Release		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD06968.D	1	06/10/11	JB	06/10/11	OP3828	GFD304
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	15	10	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		61-142%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SS05-1.5'		
Lab Sample ID:	D24149-6	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	86.1
Project:	Jolley #4 Release		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.0	0.47	mg/kg	5	06/10/11	06/11/11	GJ	SW846 6020 [2]	SW846 3050B [5]
Barium	206	2.4	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Cadmium	< 1.2	1.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Chromium	8.5	1.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Copper	10.9	1.2	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Lead	7.2	5.9	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Mercury	< 0.11	0.11	mg/kg	1	06/13/11	06/13/11	JY	SW846 7471A [3]	SW846 7471A [6]
Nickel	19.6	3.5	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Selenium	< 5.9	5.9	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Silver	< 3.5	3.5	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]
Zinc	26.1	3.5	mg/kg	1	06/10/11	06/10/11	GJ	SW846 6010B [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA1584
(2) Instrument QC Batch: MA1585
(3) Instrument QC Batch: MA1586
(4) Prep QC Batch: MP4910
(5) Prep QC Batch: MP4911
(6) Prep QC Batch: MP4914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS05-1.5'		
Lab Sample ID:	D24149-6	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	86.1
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 0.46	0.46	mg/kg	1	06/10/11 16:30	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	8.2	1.7	mg/kg	1	06/10/11 16:30	AMA	SW846 3060/7196A M
Redox Potential Vs H2	404		mv	1	06/09/11 14:00	JK	ASTM D1498-76M
Solids, Percent	86.1		%	1	06/13/11	SWT	SM19 2540B M
Specific Conductivity	156	1.0	umhos/cm	1	06/10/11	JK	DEPT.OF AG, BOOK N9
pH	9.69		su	1	06/08/11 15:00	CJ	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS05-1.5'		
Lab Sample ID:	D24149-6A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	86.1
Project:	Jolley #4 Release		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	49.5	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Magnesium	5.55	1.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]
Sodium	18.9	2.0	mg/l	1	06/09/11	06/10/11	GJ	SW846 6010B [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA1584
(2) Prep QC Batch: MP4904

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SS05-1.5'		
Lab Sample ID:	D24149-6A	**Date Sampled:**	06/07/11
Matrix:	SO - Sludge	**Date Received:**	06/08/11
		Percent Solids:	86.1
Project:	Jolley #4 Release		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	0.679		ratio	1	06/10/11 19:27	GJ	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Chain of Custody (Accutest Labs of New England, Inc.)

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

PAGE 1 OF 1

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: D24149

Client / Reporting Information

Company Name: LT Environmental
Street Address: 820 Megan Avenue Unit B
City: Rifle, Colorado
Project Contact: Brian Dodek bdodek@ltenv.com
Phone #: (303) 962-5535
Sampler(s) Name(s): Asher W

Project Information

Project Name: Jolley #4 Relsease
Street:
City: State:
Project #: 0273-11022
Client Purchase Order #:
Project Manager: Brian D

Billing Information (if different from Report to)

Company Name:
Street Address:
City:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	TPH (GRO/DRO) 8015	BTEX 8260	PAHs	EC, pH, SAR	Table 910-1 Metals* 6010	Total Arsenic 6020	LAB USE ONLY
	Stockpile01		6/7/2011	11:34	AW	SL	2					X				X	X	X	X	X	X	01
	SS01-0.5'		6/7/2011	10:55	AW	SL	5					X				X	X	X	X	X	X	02
	SS02-0.5'		6/7/2011	10:48	AW	SL	5					X				X	X	X	X	X	X	03
	SS03-6'		6/7/2011	9:57	AW	SL	5					X				X	X	X	X	X	X	04
	SS04-0.5'		6/6/2011	14:20	AW	SL	5					X				X	X	X	X	X	X	05
	SS05-1.5'		6/7/2011	11:06	AW	SL	2					X				X	X	X	X	X	X	06
																						6/8/11

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [ ] Std. 10 Business Days
- [ ] 6 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [X] 6 Day Turn Per Bruce S

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [ ] Report by PDF
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

* Table 910-1 Metals Ba, Cd, CrIII, CrVI, Cu, Pb, Ni, Se, Hg, Ag, Zn

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		6/7/11 10:59		2		6/8/11 1405 Jacob Porter
3				4		
5				Custody Seal # HDICO	Intact / Not Intact	Preserved where applicable: On Ice: 3.9 °C

D24149: Chain of Custody
Page 1 of 3

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D24149 **Client:** LT ENV. **Immediate Client Services Action Required:** No

Date / Time Received: 6/8/2011 2:05:00 PM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: JOLLEY #4 RELEASE **Airbill #'s:** HD/CO

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	
2. Trip Blank listed on COC:	☐		☐	
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume rec'd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D24149: Chain of Custody
Page 2 of 3

Job Change Order: D24149_6/10/2011

Requested	6/10/2011	**Received Date:**	6/8/2011
Account Name:	LT Environmental	**Due Date:**	6/15/2011
Project	Jolly 4	**Deliverable:**	COMMBN
CSR:	RR	**TAT (Days):**	0

Change: Please remove SCON, PH,SAR,TABLE 9-10 METALS, AND TOTAL ASMS from this sample as we are unable to analyze due to sample matrix. Rocks

Sample #: D24149-5

SS04-0.5'

Above Changes Per: Lab **Date:** 6/10/2011

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service Representative.

Page 1 of 1

D24149: Chain of Custody
Page 3 of 3

CHAIN OF CUSTODY

ACCUTEST

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

Accutest Job #:	D24149
Accutest Quote #:	0
AMS P.O. #:	
Project No.:	

Client Information			Subcontract Laboratory Information			Analytical Information
Name: Accutest Mountain States (AMS)			Name: Accutest - New England			
Address: 4036 Youngfield St.			Address: 495 Technology Center West, BLDG C			
City: Wheat Ridge,	State: CO	Zip: 80033	City: Marlborough	State: MA	Zip: 01752	
Send Report to: Tiffany Pham			Contact: Sample Management			
Any questions contact: Amanda Kissell						
Phone/Fax #: (303) 425-6021; (303)425-6854			Phone: (508) 481-6200			

Field ID / Point of Collection	Collection Date	Collection Time		Matrix	# of bottles	Preservation HCL	NaOH	HNO3	H2SO4	None	XCRA					Comments
D24149 -1	6/7/11	11:34 AM		Soil	1						X					
-2		10:55 AM		Soil	1						X					
-3		10:48 AM		Soil	1						X					
-4		9:57 AM		Soil	1						X					
-5		2:20 PM		Soil	1						X					
-6		11:06 AM		Soil	1						X					
-																
-																

Turnaround Information

- [X] 3 - 5 Business Day Rush
- [ ] Other _____ (Days)

Approved By: _____

10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Commercial "BN"
- [ ] Reduced Tier 1
- [ ] Full Tier 1
- [ ] PDF
- [ ] Compact Disk Deliverable
- [ ] Electronic Delivery: _____
- [ ] State Forms
- [ ] Other (Specify) _____

Comments / Remarks

Please use Colorado regulations and RLs.

15D

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date & Time:	Received By:	Date & Time:
1	[signature]	6/8/11	FedEx	
2	FedEx	6/9/11 10:00	[signature]	
3				

For Subcontract Laborartory Use Only

Seal #: _____ Headspace: Yes ☐ No ☐ NA ☐

Preserved where applicable: ☐

Temperature °C 1.6 On Ice ☑

4.2 4

D24149: Chain of Custody
Page 1 of 1
Accutest Labs of New England, Inc.

22-Sep-2011

Brian Dodek
LT Environmental
4400 W. 46th Ave
Denver, CO 80212

Tel: (303) 962-5535
Fax:

Re: Jolley #4 Work Order: **1109533**

Dear Brian,

ALS Environmental received 2 samples on 17-Sep-2011 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Nicole Brown

Electronically approved by: Makenzie L. Henderson

Nicole Brown
Project Manager

Certificate No: T104704231-09A-TX

ALS Environmental

Date: 22-Sep-11

Client: LT Environmental
Project: Jolley #4
Work Order: **1109533**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1109533-01	Stockpile 02	Soil		9/16/2011 13:44	9/17/2011 09:55	☐
1109533-02	SS06	Soil		9/16/2011 13:30	9/17/2011 09:55	☐

ALS Environmental

Date: 22-Sep-11

Client: LT Environmental
Project: Jolley #4
Work Order: 1109533

Case Narrative

Batch R116468, Method 8015 GRO, Sample 1109524-01A: The recovery is below the control limits for the MS/MSD. Both the sample for this workorder, 1109533-01, and the sample used for the MS/MSD for this analytical batch from work order 1109524 had non detected results for GRO. In addition, the LCS/DLCS passed control criteria for this analytical batch.

ALS Environmental

Date: *22-Sep-11*

Client: LT Environmental
Project: Jolley #4
Work Order: 1109533
Sample ID: Stockpile 02
Lab ID: 1109533-01
Collection Date: 9/16/2011 01:44 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH AND MISCELLANEOUS GCFID			**SW8015M**		Prep Date: **9/20/2011**	Analyst: **SE**
DRO (>C10 - C28)	**70**		**3.4**	**mg/Kg**	2	9/22/2011 12:54 PM
Surr: 2-Fluorobiphenyl	*103*		*70-130*	*%REC*	2	9/22/2011 12:54 PM
GASOLINE RANGE ORGANICS - SW8015C			**SW8015**			Analyst: **JFT**
Gasoline Range Organics	ND		0.050	mg/Kg	1	9/21/2011 03:09 PM
Surr: 4-Bromofluorobenzene	*76.1*		*70-130*	*%REC*	1	9/21/2011 03:09 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *22-Sep-11*

Client: LT Environmental
Project: Jolley #4
Work Order: 1109533
Sample ID: SS06
Lab ID: 1109533-02
Collection Date: 9/16/2011 01:30 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH AND MISCELLANEOUS GCFID			**SW8015M**		Prep Date: **9/20/2011**	Analyst: **SE**
DRO (>C10 - C28)	**31**		**1.7**	**mg/Kg**	1	9/22/2011 12:34 PM
Surr: 2-Fluorobiphenyl	*96.5*		*70-130*	*%REC*	1	9/22/2011 12:34 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 22-Sep-11

Client: LT Environmental

Work Order: 1109533

Project: Jolley #4

QC BATCH REPORT

Batch ID: **55525A** Instrument ID **FID-7** Method: **SW8015M**

MBLK Sample ID: **FBLKS2-110920-55525A** Units: **mg/Kg** Analysis Date: **9/21/2011 12:58 PM**

Client ID: Run ID: **FID-7_110920D** SeqNo: **2534054** Prep Date: **9/20/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	ND	1.7								
Surr: 2-Fluorobiphenyl	*4.246*	0	*3.3*	0	*129*	*70-130*	0			

LCS Sample ID: **FLCSS2-110920-55525A** Units: **mg/Kg** Analysis Date: **9/21/2011 01:18 PM**

Client ID: Run ID: **FID-7_110920D** SeqNo: **2534055** Prep Date: **9/20/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	33.8	1.7	33.3	0	101	70-130	0			
Surr: 2-Fluorobiphenyl	*3.867*	0	*3.3*	0	*117*	*70-130*	0			

MS Sample ID: **1109529-02AMS** Units: **mg/Kg** Analysis Date: **9/21/2011 02:02 PM**

Client ID: Run ID: **FID-7_110920D** SeqNo: **2534057** Prep Date: **9/20/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	38.37	1.7	33.2	0.07821	115	70-130	0			
Surr: 2-Fluorobiphenyl	*4.172*	0	*3.29*	0	*127*	*70-130*	0			

MSD Sample ID: **1109529-02AMSD** Units: **mg/Kg** Analysis Date: **9/21/2011 02:25 PM**

Client ID: Run ID: **FID-7_110920D** SeqNo: **2534058** Prep Date: **9/20/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	34.52	1.7	33.27	0.07821	104	70-130	38.37	10.6	30	
Surr: 2-Fluorobiphenyl	*3.661*	0	*3.297*	0	*111*	*70-130*	4.172	*13*	*30*	

The following samples were analyzed in this batch: 1109533-01A 1109533-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: LT Environmental
Work Order: 1109533
Project: Jolley #4

QC BATCH REPORT

Batch ID: **R116468** Instrument ID **FID-9** Method: **SW8015**

MBLK Sample ID: **GBLKS1-090921-R116468** Units: **mg/Kg** Analysis Date: **9/21/2011 12:06 PM**
Client ID: Run ID: **FID-9_110921A** SeqNo: **2532619** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	ND	0.050								
Surr: 4-Bromofluorobenzene	*0.07836*	0.0050	*0.1*	0	*78.4*	*70-130*	0			

LCS Sample ID: **GLCSS1-090921-R116468** Units: **mg/Kg** Analysis Date: **9/21/2011 11:14 AM**
Client ID: Run ID: **FID-9_110921A** SeqNo: **2532617** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9299	0.050	1	0	93	70-130	0			
Surr: 4-Bromofluorobenzene	*0.08783*	0.0050	*0.1*	0	*87.8*	*70-130*	0			

LCSD Sample ID: **GLCSDS1-090921-R116468** Units: **mg/Kg** Analysis Date: **9/21/2011 11:32 AM**
Client ID: Run ID: **FID-9_110921A** SeqNo: **2532618** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9539	0.050	1	0	95.4	70-130	0.9299	0	30	
Surr: 4-Bromofluorobenzene	*0.08792*	0.0050	*0.1*	0	*87.9*	*70-130*	0.08783	*0*	*30*	

MS Sample ID: **1109524-01AMS** Units: **mg/Kg** Analysis Date: **9/21/2011 12:41 PM**
Client ID: Run ID: **FID-9_110921A** SeqNo: **2532621** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.3873	0.050	1	0.02574	36.2	70-130	0			S
Surr: 4-Bromofluorobenzene	*0.07598*	0.0050	*0.1*	0	*76*	*70-130*	0			

MSD Sample ID: **1109524-01AMSD** Units: **mg/Kg** Analysis Date: **9/21/2011 12:59 PM**
Client ID: Run ID: **FID-9_110921A** SeqNo: **2532622** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.3719	0.050	1	0.02574	34.6	70-130	0.3873	0	30	S
Surr: 4-Bromofluorobenzene	*0.07693*	0.0050	*0.1*	0	*76.9*	*70-130*	0.07598	*0*	*30*	

The following samples were analyzed in this batch: 1109533-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 22-Sep-11

Client: LT Environmental
Project: Jolley #4
WorkOrder: **1109533**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/Kg	Milligrams per Kilogram

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

		SAMPLER	Rob Fishburn	DATE	9/16/11
PROJECT NAME		SITE ID	Jolley #4	TURNAROUND	Standard 5 Day
PROJECT No.	0273-11022	EDD FORMAT			
		PURCHASE ORDER			
COMPANY NAME	LT Environmental	BILL TO COMPANY	Same		
SEND REPORT TO	Asher Weinberg	INVOICE ATTN TO			
ADDRESS	820 Megan Unit B	ADDRESS			
CITY / STATE / ZIP	Rifle CO 81650	CITY / STATE / ZIP			
PHONE	970-285-9985	PHONE			
FAX		FAX			
E-MAIL	aweinberg@ltenv.com	E-MAIL			

WORKORDER #	
PAGE	1 of 1
DISPOSAL	By Lab or Return to Client

1109533

LT ENVIRONMENTAL: LT Environmental

Project: Jolley #4

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	GRO	GRO
	Stockpile 02	Soil	9/16/11	13:44	2			X	X
	SS06	Soil	9/16/11	13:30	2			X	

Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: Hold GRO

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Rob Fishburn	9/16/11	15:30
RECEIVED BY	FED EX ALS	Rishel Davan	9/17/11	09:55
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental

Sample Receipt Checklist

Client Name: **LT ENVIRONMENTAL** Date/Time Received: **17-Sep-11 09:00**

Work Order: **1109533** Received by: **RDN**

Checklist completed by Raymond N Gamboa 19-Sep-11 Reviewed by: Nicole Brown 19-Sep-11
eSignature Date eSignature Date

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.3c	002	
Cooler(s)/Kit(s):	4254		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

W.O.# 1109533

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: Time:
Name:
Company:

Seal Broken By: RM
Date: 9/17/11

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: Time:
Name:
Company:

Seal Broken By: RM
Date: 9/17/11

... information may be removed for recipient's records.

e 9/16-11 FedEx Tracking Number 875887563230

...ider's ...ne LT Environmental Phone 970 285 9985

Company

Address 820 Megan Unit B Dept./Floor/Suite/Room

Rifle State CO ZIP 81650

...ur Internal Billing Reference

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 29, 2010

Brian Dodek
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003

RE: BBC - Jolly 4

Enclosed are the results of analyses for samples received by Summit Scientific on 09/24/10 08:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

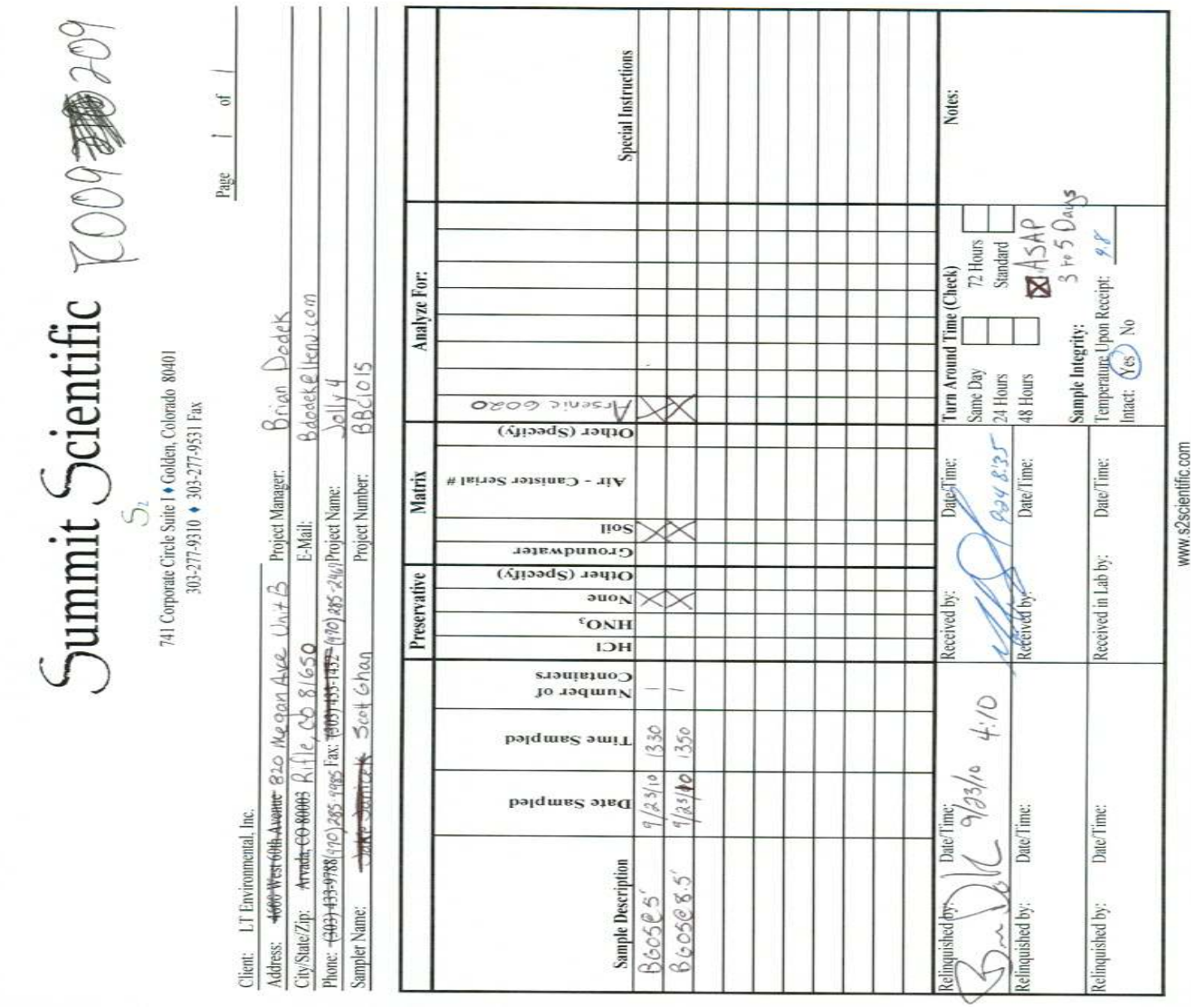
Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Jolly 4 Project Number: BBC 1015 Project Manager: Brian Dodek	**Reported:** 09/29/10 15:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BG05@5'	R009209-01	Soil	09/23/10 13:30	09/24/10 08:35
BG05@8.5'	R009209-02	Soil	09/23/10 13:50	09/24/10 08:35

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Jolly 4 Project Number: BBC 1015 Project Manager: Brian Dodek	**Reported:** 09/29/10 15:09



Summit Scientific

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-277-9531 Fax

Page 1 of 1

Client: LT Environmental, Inc.
Address: ~~4600 West 60th Avenue~~ 820 Megan Ave Unit B Project Manager: Brian Dodek
City/State/Zip: ~~Arvada, CO 80003~~ Rifle, CO 81650 E-Mail: Bdodek@ltenv.com
Phone: ~~(303) 433-9788~~ (970) 285-9985 Fax: ~~(303) 433-1432~~ (970) 285-2490 Project Name: Jolly 4
Sampler Name: ~~Jake Sherrick~~ Scott Ghan Project Number: BBC1015

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	HNO_3	None	Other (Specify)	Matrix: Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Analyze For: BTEX	Special Instructions
B605@5'	9/23/10	1330	1			X			X			X	
B605@8.5'	9/23/10	1350	1			X			X			X	

Relinquished by: Date/Time: 9/23/10 4:10 Received by: Date/Time:
Relinquished by: Date/Time: Received by: Date/Time:
Relinquished by: Date/Time: Received in Lab by: Date/Time:

Turn Around Time (Check): Same Day, 24 Hours, 48 Hours, 72 Hours, Standard, ASAP 3 to 5 Days
Sample Integrity: Temperature Upon Receipt: 8.8° Intact: Yes No
Notes:

www.s2scientific.com

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Jolly 4 Project Number: BBC 1015 Project Manager: Brian Dodek	**Reported:** 09/29/10 15:09

BG05@5'
R009209-01 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **09/23/10 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**3.92**	0.05	mg/kg	1	0092904	09/28/10	09/29/10	EPA 200.8	

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Jolly 4 Project Number: BBC 1015 Project Manager: Brian Dodek	**Reported:** 09/29/10 15:09

BG05@8.5'
R009209-02 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **09/23/10 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**4.89**	0.05	mg/kg	1	0092904	09/28/10	09/29/10	EPA 200.8	

S2

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Jolly 4 Project Number: BBC 1015 Project Manager: Brian Dodek	**Reported:** 09/29/10 15:09

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

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Jolly 4 Project Number: BBC 1015 Project Manager: Brian Dodek	**Reported:** 09/29/10 15:09

Notes and Definitions

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