

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

## 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.

OGCC Employee:

<input type="checkbox"/> Spill	<input type="checkbox"/> Complaint
<input type="checkbox"/> Inspection	<input type="checkbox"/> NOAV

Tracking No:

## CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

## GENERAL INFORMATION

<b>OGCC Operator Number:</b> 10071		<b>Contact Name and Telephone</b>	
Name of Operator: Bill Barrett Corporation (BBC)		Name: Scott Ghan	
Address: 112 Red Feather Trail		No: 970-876-1959	
City: Silt State: CO Zip: 81652		Fax: 970-876-0981	
API/Facility No: 05-045-14263		County: Garfield	
Facility Name: Specialty 11A-28-692 Pipeline ROW		Facility Number:	
Well Name: Specialty		Well Number: 11A-28-692	
Location (QtrQtr, Sec, Twp, Rng, Meridian) SWNW 28 6S 92W 6 PM		Latitude: 39.500809 Longitude: -107.679465	

## TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Produced Water		
Site Conditions: Is location within a sensitive area (according to Rule 9C) <input type="checkbox"/> Y <input checked="" type="checkbox"/> 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: Potts loam, 3 to 6 percent slopes		
Potential receptors (water wells within 1/4 mi, surface waters, etc.): Surface water is located 60 feet (ft.) south; a water well is located 1,259 ft. north; a building is located 2,759 ft. southwest; and groundwater is estimated to be 30 ft. below ground surface (bgs).		
Description of Impact (if previously provided, refer to that form or document):		
Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	47 ft. N-S x 3.5 ft. E-W x 5 ft. bgs	Field screening and laboratory analysis of soil samples
<input type="checkbox"/> Vegetation		
<input type="checkbox"/> Groundwater		
<input type="checkbox"/> Surface water		

## REMEDIALTION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document)
Form 19 was submitted on April 19, 2011 (Spill # 2213639)
Describe how source is to be removed
An excavator constructing a pipeline trench ruptured an unmarked 4 inch poly production water line associated with BBC's centralized water system. The 4 inch poly production water line was isolated by two valves. A vacuum truck recovered 15 barrels (bbls) of produced water from the trench where the release pooled. Additionally, BBC contractors flushed the spill area with fresh water and the rinsate was simultaneously removed via vacuum truck. On April 14, 2011, four soil samples were collected at various depths from the extent of the spill area and were submitted for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), total petroleum hydrocarbons gasoline range organics (TPH-GRO), polycyclic aromatic hydrocarbons (PAHs), Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 metals, electrical conductivity (EC), pH, and sodium adsorption ratio (SAR). A topographic site location map and a site map are provided as Figures 1 and 2. Laboratory analytical results are summarized in Table 1 and the laboratory report is included 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.:
A total of 15 bbls of produced water was treated and reincorporated into the BBC centralized water system. No soil was excavated as the release occurred in an open trench.

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## REMEDIATION WORKPLAN (CONT.)

OGCC Employee: \_\_\_\_\_

Tracking Number: \_\_\_\_\_

Name of Operator: BBCOGCC Operator No: 10071

Received Date: \_\_\_\_\_

Well Name & No: Specialty 11A-28-692Facility Name & No.: Specialty 11A-28-692 Pipeline ROW

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

Groundwater was not encountered during sampling activities. Based on topography, the depth to groundwater is estimated to be 30 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.

BBC's pipeline right-of-way (ROW) was backfilled with clean native material to match the existing grade.

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:

Soil samples were collected in the north and south ends of the excavation. Two samples were collected at each location; one from 5 feet bgs and one from 7 feet bgs. Laboratory analytical results for the soil samples indicated BTEX, TPH-GRO, TPH-DRO, PAHs, Table 910-1 Metals, EC, pH, and SAR are in compliance with COGCC Table 910-1 concentration levels or were within background concentrations encountered in the area.

Although it is not listed in the analytical table, a background sample was collected at depth off the Specialty #1 pad surface during pit closure activities. Analytical results for sample BG04-12.5' indicated a background arsenic concentration of 6 milligrams per kilogram, which exceeds the arsenic concentrations for samples collect from the excavation. The laboratory analytical results for BG04-12.5' are provided as an attachment. Based on the analytical results, BBC is requesting a No Further Action determination for the site.

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

A total of 15 barrels of produced water was treated and reincorporated into the BBC centralized water system.

## IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	<u>4/14/11</u>	Date Site Investigation Completed:	<u>4/27/11</u>	Remediation Plan Submitted:	<u>7/20/11</u>
Remediation Start Date:	<u>4/27/11</u>	Anticipated Completion Date:	<u>NA</u>	Actual Completion Date:	<u>4/27/11</u>

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: 7/26/11

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_



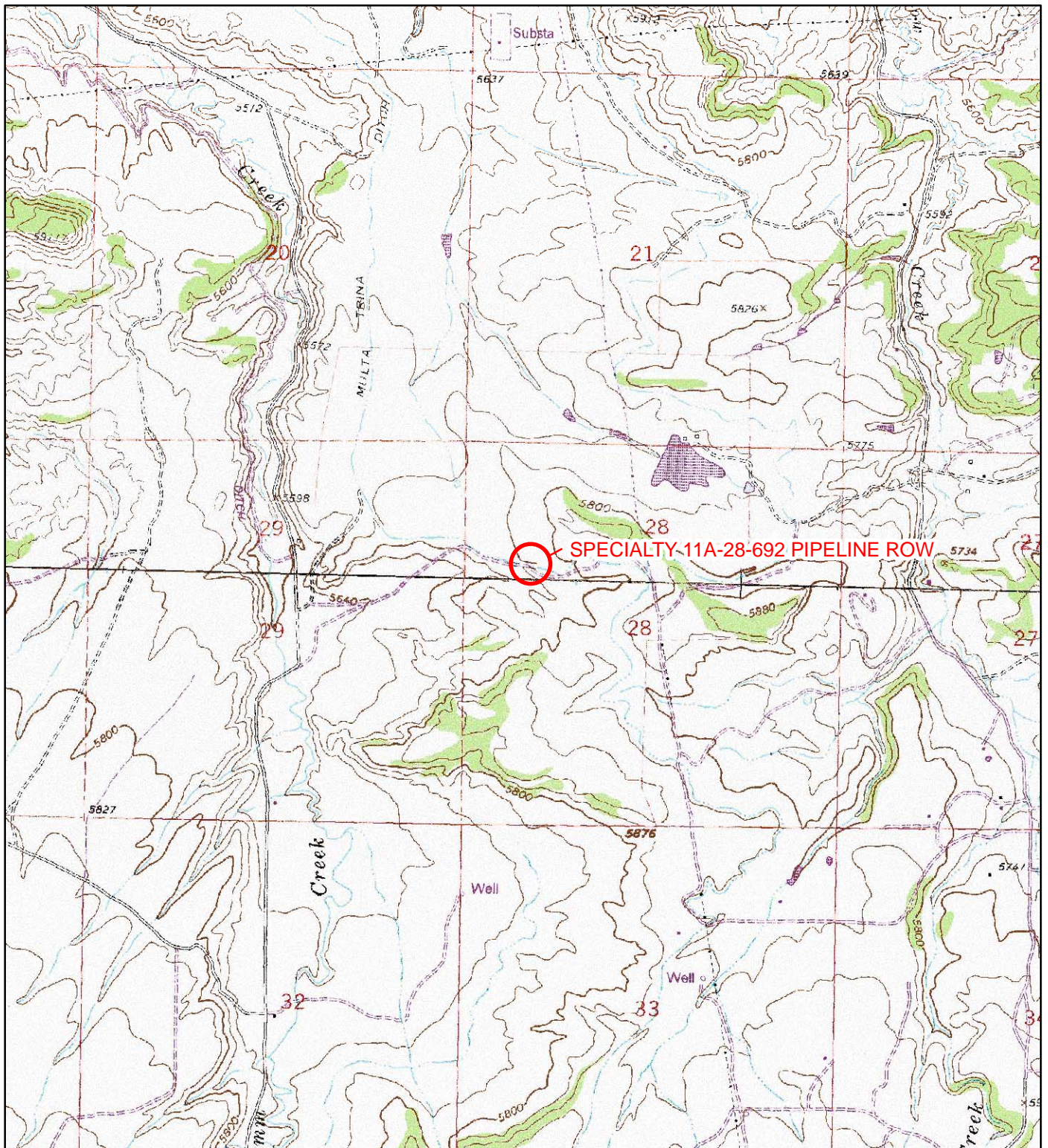
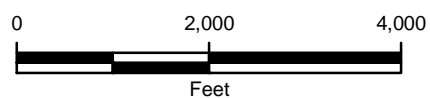


IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

# LEGEND

 SITE LOCATION



**FIGURE 1**  
**SITE LOCATION MAP**  
**SPECIALTY 11A-28-692 PIPELINE ROW**  
**SWNW SEC 28 T6S R92W**  
**GARFIELD COUNTY, COLORADO**  
**BILL BARRETT CORPORATION**







PROJECT SPECIALTY 11A-28-692 PIPELINE ROW  
PROJECT MANAGER ASHLEY WIENBERG  
JOB No.  
LOCATION NEW 28 65 92W

DATE 4.14.11

CONT. No.

BY CM

CHK'D

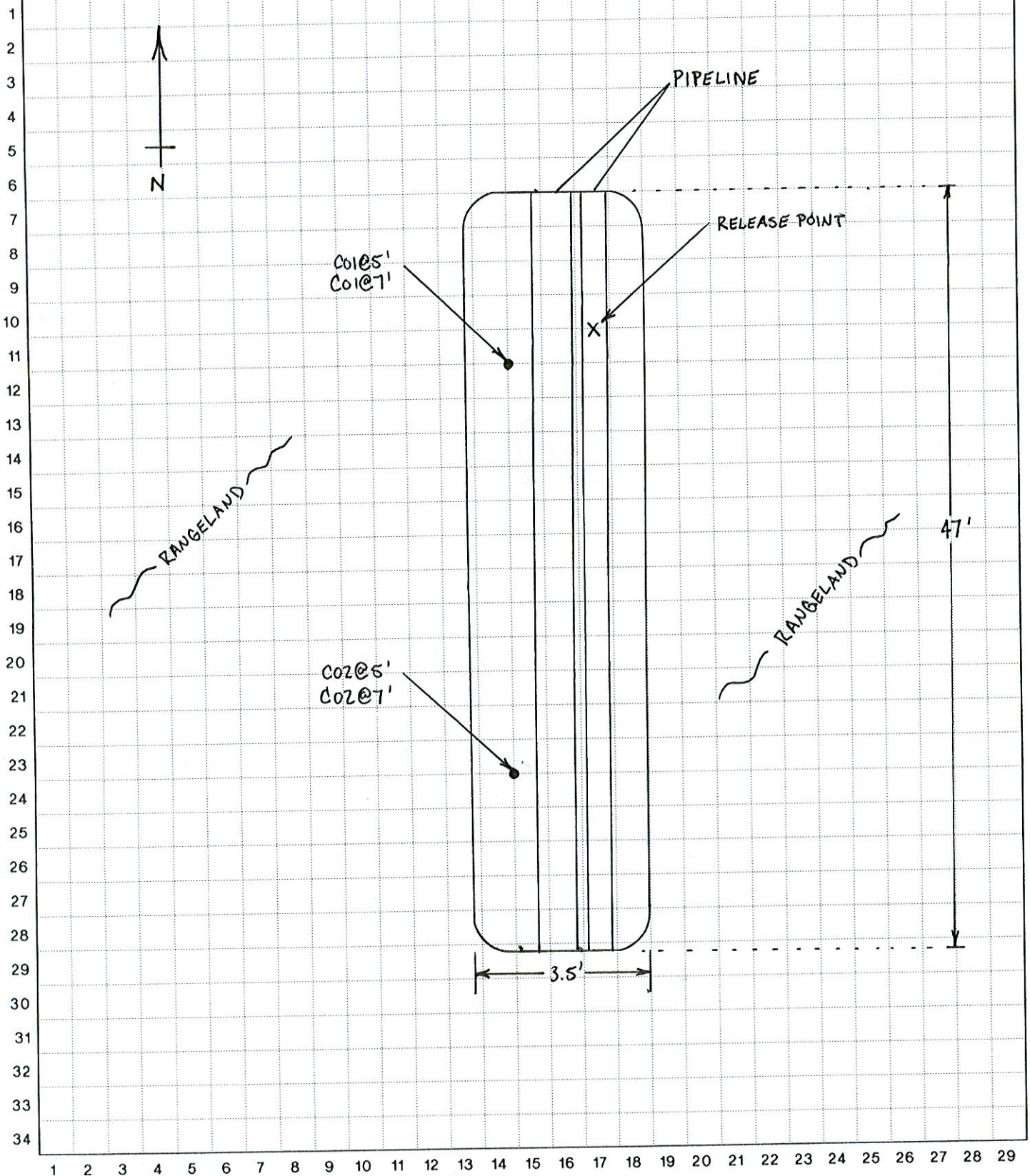
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OF

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95LT0038 10/1997



**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**SPECIALTY 11A-28-692 PIPELINE ROW**  
**GARFIELD COUNTY, COLORADO**  
**BILL BARRETT CORPORATION**

Parameter	Standard	C01	C01	C02	C02
Depth (feet)		5	7	5	7
Sample Date		4/14/2011	4/14/2011	4/14/2011	4/14/2011

**Inorganics**

Electrical Conductivity (mmhos/cm)	4	1.38	1.11	1.32	0.757
SAR (units)	12	10	6.1	10.7	3.1
pH, Lab (pH Units)	6 to 9	8.6	8.6	8.8	8.2

**Metals**

Arsenic (mg/kg)	0.39	<b>2.77</b>	<b>3.27</b>	<b>3.07</b>	<b>2.7</b>
Barium (mg/kg)	15000	246.5	421.1	288.3	202.3
Cadmium (mg/kg)	70	0.4	0.3	0.4	0.3
Chromium (mg/kg)		9.5	9	11.7	10
Chromium+3 Calculated (mg/kg)	120000	9	8.7	11.3	9.4
Chromium, Hexavalent (mg/kg)	23	0.5	<0.43	<0.49	0.57
Copper (mg/kg)	3100	12.5	12.2	17.4	14.7
Lead (mg/kg)	400	12.5	10.9	14.8	12
Mercury (mg/kg)	23	<0.05	<0.05	<0.05	<0.05
Nickel (mg/kg)	1600	14.7	13.7	18.8	15.1
Selenium (mg/kg)	390	<0.05	<0.05	<0.05	<0.05
Silver (mg/kg)	390	<0.1	<0.1	<0.1	<0.1
Zinc (mg/kg)	23000	52.37	45.64	65.74	53.83

**Organic Compounds**

TPH-DRO (mg/kg)		<50	<50	<50	<50
TPH-GRO (mg/kg)		<0.50	<0.50	6.2	<0.50
Benzene (mg/kg)	0.17	<0.0050	<0.0050	0.046	0.010
Toluene (mg/kg)	85	<0.0050	<0.0050	0.096	0.032
Ethylbenzene (mg/kg)	100	<0.0050	<0.0050	<0.0050	<0.0050
Xylenes, Total (mg/kg)	175	0.022	<0.0050	0.50	0.032
Acenaphthene (mg/kg)	1000	<0.005	<0.005	<0.005	<0.005
Anthracene (mg/kg)	1000	<0.005	<0.005	<0.005	<0.005
Benzo (a) anthracene (mg/kg)	0.22	<0.005	<0.005	<0.005	<0.005
Benzo (b) fluoranthene (mg/kg)	0.22	<0.005	<0.005	<0.005	<0.005
Benzo (k) fluoranthene (mg/kg)	2.2	<0.005	<0.005	<0.005	<0.005
Benzo (a) pyrene (mg/kg)	0.022	<0.005	<0.005	<0.005	<0.005
Chrysene (mg/kg)	22	<0.005	<0.005	<0.005	<0.005
Dibenz (a,h) anthracene (mg/kg)	0.022	<0.01	<0.01	<0.01	<0.01
Fluoranthene (mg/kg)	1000	<0.005	<0.005	<0.005	<0.005
Fluorene (mg/kg)	1000	<0.005	<0.005	<0.005	<0.005
Indeno (1,2,3-cd) pyrene (mg/kg)	0.22	<0.01	<0.01	<0.01	<0.01
Naphthalene (mg/kg)	23	<0.005	<0.005	<0.005	<0.005
Pyrene (mg/kg)	1000	<0.005	<0.005	<0.005	<0.005



**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**SPECIALTY 11A-28-692 PIPELINE ROW**  
**GARFIELD COUNTY, COLORADO**  
**BILL BARRETT CORPORATION**

Parameter	Standard	C01	C01	C02	C02
Depth (feet)		5	7	5	7
Sample Date		4/14/2011	4/14/2011	4/14/2011	4/14/2011

**Notes:**

< - less than stated laboratory reporting limit

Bold numbers indicate result equalled or exceeded standard.

Basic Standards for Soil are taken 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



# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 27, 2011

Brian Dodek

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

RE: BBC - Socialty 11A-28-692 Pipeline ROW

Enclosed are the results of analyses for samples received by Summit Scientific on 04/15/11 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to be 'PS' followed by a long horizontal stroke.

Paul Shrewsbury For Ben Shrewsbury  
President / Laboratory Director



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

Project: BBC - Specialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C01@5'	R104100-01	Soil	04/14/11 14:25	04/15/11 15:00
C01@7'	R104100-02	Soil	04/14/11 14:32	04/15/11 15:00
C02@5'	R104100-03	Soil	04/14/11 14:40	04/15/11 15:00
C02@7'	R104100-04	Soil	04/14/11 14:50	04/15/11 15:00

Summit Scientific

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R104100

Summit Scientific

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303-277-9310 ♦ 303-277-9531 Fax

Page 1 of 1

Client:	LT Environmental
Address:	820 Megan Avenue Unit B
City/State/Zip:	Rifle, CO 81650
Phone:	(970) 285-9985
Sample Name:	Asler Weinberg
Project Manager:	Brian Dealek
E-Mail:	bdealek@ltenv.com
Project Name:	Sociality 11A-238-692 Pipeline ROW
Project Number:	0273-1010

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative						Matrix							Analyze For:	Special Instructions
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	TPH DRO/GRO	BTEX	PAHs, 3.1	EC, pH, SAR	Table 910-1 Metals *		
C01@S	4/14/2011	1425	4		X													
C01@T	4/14/2011	1436	4		X													
C02@S	4/14/2011	1440	4		X													
C02@T	4/14/2011	1450	4		X													
Relinquished by: [Signature]	Date/Time: 4.15.11 1200	Received by: [Signature]								Date/Time: 4-15-11	Turn Around Time (Check) Same Day 24 Hours 48 Hours				72 Hours Standard	[ ] X	Notes: Metals: Barium, Cadmium, Chromium (6), Chromium (III), Copper, Lead, Manganese, Nickel, Selenium, Silver, Zinc	
Relinquished by: [Signature]	Date/Time:	Received by: [Signature]								Date/Time:								
Relinquished by:	Date/Time:	Received for lab by: [Signature]								Date/Time: 4.15.11								

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW

Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C01@5'**  
**R104100-01 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1041804	04/22/11	04/24/11	EPA 8270D SIM	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	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	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		82.5 %	30-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		99.1 %	30-120		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		110 %	30-120		"	"	"	"	
Surrogate: Terphenyl-d14		104 %	30-120		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1041903	04/19/11	04/25/11	8015 Full Carbon Chain	

Summit Scientific

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C01@5'**  
**R104100-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		102 %	88.8-124		1041903	04/19/11	04/25/11	8015 Full Carbon Chain	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1041904	04/19/11	04/21/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.022</b>	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>1,2</i> -Dichloroethane- <i>d</i> 4		98.6 %	67.4-143		"	"	"	"	
Surrogate: <i>Toluene-d</i> 8		96.9 %	77.3-114		"	"	"	"	
Surrogate: <i>4</i> -Bromofluorobenzene		93.0 %	78.4-125		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.38</b>	0.00100	mmhos/cm	1	1042106	04/22/11	04/22/11	SM 2510B	

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.6</b>		pH Units	"	1042105	"	04/22/11	EPA 9045B	

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Project: BBC - Socialty 11A-28-692 Pipeline ROW

Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C01@5'**  
**R104100-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Colorado Analytical Laboratories**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4	0.1	meq/L	1	1042702	04/25/11	04/27/11	USDA60 6 (20b)	

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	2.5	0.1	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	17.9	0.1	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.77	0.05	mg/kg	"	"	04/22/11	"	SW6020	
Barium	246.5	0.1	"	"	"	"	"	"	
Cadmium	0.4	0.1	"	"	"	"	"	"	
Copper	12.5	0.1	"	"	"	"	"	"	
Lead	12.5	0.1	"	"	"	"	"	"	
Nickel	14.7	0.1	"	"	"	"	"	"	
Selenium	ND	0.05	"	"	"	"	"	"	
Silver	ND	0.1	"	"	"	"	"	"	
Zinc	52.37	0.05	"	"	"	"	"	"	

**Colorado Analytical Laboratories - Calculated Analytes**

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C01@5'**  
**R104100-01 (Soil)**

**Summit Scientific**

**Colorado Analytical Laboratories - Calculated Analytes**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10	0.1	units	1	1042702	04/25/11	04/27/11	Calculation	

**Colorado Analytical Laboratories - Total Metals by APHA/EPA Methods**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.05	mg/kg	1	1042702	04/21/11	04/27/11	EPA 7471A	

**Evergreen Analytical Laboratories**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium	9.5	1.2	mg/kg	1	1042712	04/20/11	04/27/11	EPA 6010A	

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

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	0.5	0.46	mg/kg	1	1042712	"	04/27/11	3060A/7196 A	

**Evergreen Analytical - Trivalent Chromium, Calculated, Soil Basis**

Date Sampled: **04/14/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	9	1.7	mg/kg	1	1042712	"	04/27/11	CalcCr+3	

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Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

Reported:  
04/27/11 20:12

**C01@7'**  
**R104100-02 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1041804	04/22/11	04/24/11	EPA 8270D SIM	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	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	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		67.6 %	30-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		97.4 %	30-120		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		98.3 %	30-120		"	"	"	"	
Surrogate: Terphenyl-d14		119 %	30-120		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1041903	04/19/11	04/22/11	8015 Full Carbon Chain	

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C01@7'**  
**R104100-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.2 %	88.8-124		1041903	04/19/11	04/22/11	8015 Full Carbon Chain	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1041904	04/19/11	04/21/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.6 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		97.3 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	78.4-125		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.11	0.00100	mmhos/cm	1	1042106	04/22/11	04/22/11	SM 2510B	

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.6		pH Units	"	1042105	"	04/22/11	EPA 9045B	

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW

Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C01@7'**  
**R104100-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Colorado Analytical Laboratories**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.2	0.1	meq/L	1	1042702	04/25/11	04/27/11	USDA60 6 (20b)	

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	3.5	0.1	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	12.8	0.1	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.27	0.05	mg/kg	"	"	04/22/11	"	SW6020	
Barium	421.1	0.1	"	"	"	"	"	"	
Cadmium	0.3	0.1	"	"	"	"	"	"	
Copper	12.2	0.1	"	"	"	"	"	"	
Lead	10.9	0.1	"	"	"	"	"	"	
Nickel	13.7	0.1	"	"	"	"	"	"	
Selenium	ND	0.05	"	"	"	"	"	"	
Silver	ND	0.1	"	"	"	"	"	"	
Zinc	45.64	0.05	"	"	"	"	"	"	

**Colorado Analytical Laboratories - Calculated Analytes**

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LT Environmental, Inc.  
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Arvada CO, 80003

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C01@7'**  
**R104100-02 (Soil)**

**Summit Scientific**

**Colorado Analytical Laboratories - Calculated Analytes**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.1	0.1	units	1	1042702	04/25/11	04/27/11	Calculation	

**Colorado Analytical Laboratories - Total Metals by APHA/EPA Methods**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.05	mg/kg	1	1042702	04/21/11	04/27/11	EPA 7471A	

**Evergreen Analytical Laboratories**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium	9	1.1	mg/kg	1	1042712	04/20/11	04/27/11	EPA 6010A	

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

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.43	mg/kg	1	1042712	"	04/27/11	3060A/7196 A	

**Evergreen Analytical - Trivalent Chromium, Calculated, Soil Basis**

Date Sampled: **04/14/11 14:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	8.7	1.5	mg/kg	1	1042712	"	04/27/11	CalcCr+3	

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LT Environmental, Inc.  
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Arvada CO, 80003

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C02@5'**  
**R104100-03 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1041804	04/22/11	04/24/11	EPA 8270D SIM	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	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	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		94.7 %	30-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		102 %	30-120		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		98.5 %	30-120		"	"	"	"	
Surrogate: Terphenyl-d14		119 %	30-120		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1041903	04/19/11	04/25/11	8015 Full Carbon Chain	

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C02@5'**  
**R104100-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		102 %	88.8-124		1041903	04/19/11	04/25/11	8015 Full Carbon Chain	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.046</b>	0.0050	mg/kg	1	1041904	04/19/11	04/21/11	EPA 8260B	
<b>Toluene</b>	<b>0.096</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.50</b>	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>6.2</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.2 %	78.4-125		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.32</b>	0.00100	mmhos/cm	1	1042106	04/22/11	04/22/11	SM 2510B	

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.8</b>		pH Units	"	1042105	"	04/22/11	EPA 9045B	

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Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C02@5'**  
**R104100-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Colorado Analytical Laboratories**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.9	0.1	meq/L	1	1042702	04/25/11	04/27/11	USDA60 6 (20b)	

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	2.9	0.1	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	22.4	0.1	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.07	0.05	mg/kg	"	"	04/22/11	"	SW6020	
Barium	288.3	0.1	"	"	"	"	"	"	
Cadmium	0.4	0.1	"	"	"	"	"	"	
Copper	17.4	0.1	"	"	"	"	"	"	
Lead	14.8	0.1	"	"	"	"	"	"	
Nickel	18.8	0.1	"	"	"	"	"	"	
Selenium	ND	0.05	"	"	"	"	"	"	
Silver	ND	0.1	"	"	"	"	"	"	
Zinc	65.74	0.05	"	"	"	"	"	"	

**Colorado Analytical Laboratories - Calculated Analytes**

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4600 West 60th Avenue  
Arvada CO, 80003

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C02@5'**  
**R104100-03 (Soil)**

**Summit Scientific**

**Colorado Analytical Laboratories - Calculated Analytes**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.7	0.1	units	1	1042702	04/25/11	04/27/11	Calculation	

**Colorado Analytical Laboratories - Total Metals by APHA/EPA Methods**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.05	mg/kg	1	1042702	04/21/11	04/27/11	EPA 7471A	

**Evergreen Analytical Laboratories**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium	11.7	1.3	mg/kg	1	1042712	04/20/11	04/27/11	EPA 6010A	

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

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.49	mg/kg	1	1042712	"	04/27/11	3060A/7196 A	

**Evergreen Analytical - Trivalent Chromium, Calculated, Soil Basis**

Date Sampled: **04/14/11 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	11.3	1.8	mg/kg	1	1042712	"	04/27/11	CalcCr+3	

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Arvada CO, 80003

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

Reported:  
04/27/11 20:12

**C02@7'**  
**R104100-04 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	1041804	04/22/11	04/24/11	EPA 8270D SIM	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	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	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		74.7 %	30-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		94.6 %	30-120		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		108 %	30-120		"	"	"	"	
Surrogate: Terphenyl-d14		107 %	30-120		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1041903	04/19/11	04/25/11	8015 Full Carbon Chain	

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Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C02@7'**  
**R104100-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		103 %	88.8-124		1041903	04/19/11	04/25/11	8015 Full Carbon Chain	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.010</b>	0.0050	mg/kg	1	1041904	04/19/11	04/21/11	EPA 8260B	
<b>Toluene</b>	<b>0.032</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.032</b>	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.4 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		97.9 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	78.4-125		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.757</b>	0.00100	mmhos/cm	1	1042106	04/22/11	04/22/11	SM 2510B	

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.2</b>		pH Units	"	1042105	"	04/22/11	EPA 9045B	

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Project: BBC - Socialty 11A-28-692 Pipeline ROW

Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C02@7'**  
**R104100-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Colorado Analytical Laboratories**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	7.2	0.1	meq/L	1	1042702	04/25/11	04/27/11	USDA60 6 (20b)	

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	4.1	0.1	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	7.4	0.1	"	"	"	"	"	"	

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.7	0.05	mg/kg	"	"	04/22/11	"	SW6020	
Barium	202.3	0.1	"	"	"	"	"	"	
Cadmium	0.3	0.1	"	"	"	"	"	"	
Copper	14.7	0.1	"	"	"	"	"	"	
Lead	12	0.1	"	"	"	"	"	"	
Nickel	15.1	0.1	"	"	"	"	"	"	
Selenium	ND	0.05	"	"	"	"	"	"	
Silver	ND	0.1	"	"	"	"	"	"	
Zinc	53.83	0.05	"	"	"	"	"	"	

**Colorado Analytical Laboratories - Calculated Analytes**

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**C02@7'**  
**R104100-04 (Soil)**

**Summit Scientific**

**Colorado Analytical Laboratories - Calculated Analytes**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.1	0.1	units	1	1042702	04/25/11	04/27/11	Calculation	

**Colorado Analytical Laboratories - Total Metals by APHA/EPA Methods**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.05	mg/kg	1	1042702	04/21/11	04/27/11	EPA 7471A	

**Evergreen Analytical Laboratories**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium	10	1.2	mg/kg	1	1042712	04/20/11	04/27/11	EPA 6010A	

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

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	0.57	0.48	mg/kg	1	1042712	"	04/27/11	3060A/7196 A	

**Evergreen Analytical - Trivalent Chromium, Calculated, Soil Basis**

Date Sampled: **04/14/11 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	9.4	1.7	mg/kg	1	1042712	"	04/27/11	CalcCr+3	

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Arvada CO, 80003

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

## 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 1041804 - EPA 3550A

##### Blank (1041804-BLK1)

Prepared: 04/22/11 Analyzed: 04/23/11

Acenaphthene	ND	5.00	ug/kg							
Anthracene	ND	5.00	"							
Benzo (a) anthracene	ND	5.00	"							
Benzo (b) fluoranthene	ND	5.00	"							
Benzo (k) fluoranthene	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	"							
Pyrene	ND	5.00	"							
Surrogate: Nitrobenzene-d5	20.1		"	33.3	60.4	30-120				
Surrogate: 2-Fluorobiphenyl	30.5		"	33.3	91.6	30-120				
Surrogate: 2,4,6-Tribromophenol	40.7		"	33.3	122	30-120				
Surrogate: Terphenyl-d14	36.3		"	33.3	109	30-120				

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**Reported:**  
04/27/11 20:12

**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 1041804 - EPA 3550A**

**LCS (1041804-BS1)**

Prepared: 04/22/11 Analyzed: 04/23/11

Acenaphthene	26.1	5.00	ug/kg	33.3		78.3	30-120		30	
Anthracene	28.5	5.00	"	33.3		85.6	30-120		30	
Benzo (a) anthracene	27.8	5.00	"	33.3		83.3	30-120		30	
Benzo (b) fluoranthene	28.6	5.00	"	33.3		85.7	30-120		30	
Benzo (k) fluoranthene	27.2	5.00	"	33.3		81.6	30-120		30	
Benzo (a) pyrene	25.9	5.00	"	33.3		77.8	30-120		30	
Chrysene	27.5	5.00	"	33.3		82.5	30-120		30	
Dibenz (a,h) anthracene	23.7	10.0	"	33.3		71.2	30-120		30	
Fluoranthene	30.0	5.00	"	33.3		89.9	30-120		30	
Fluorene	28.7	5.00	"	33.3		86.1	30-120		30	
Indeno (1,2,3-cd) pyrene	25.0	10.0	"	33.3		75.0	30-120		30	
Naphthalene	45.5	5.00	"	33.3		137	30-120		30	
Pyrene	26.6	5.00	"	33.3		79.9	30-120		30	
Surrogate: Nitrobenzene-d5	22.2		"	33.3		66.6	30-120			
Surrogate: 2-Fluorobiphenyl	34.0		"	33.3		102	30-120			
Surrogate: 2,4,6-Tribromophenol	43.6		"	33.3		131	30-120			
Surrogate: Terphenyl-d14	35.4		"	33.3		106	30-120			

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**Reported:**  
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**Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control**  
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1041804 - EPA 3550A**

Matrix Spike (1041804-MS1)		Source: R104132-01			Prepared: 04/22/11		Analyzed: 04/23/11			
Acenaphthene	23.6	5.00	ug/kg	33.3	ND	70.7	30-120		30	
Anthracene	25.3	5.00	"	33.3	ND	75.9	30-120		30	
Benzo (a) anthracene	25.4	5.00	"	33.3	ND	76.3	30-120		30	
Benzo (b) fluoranthene	25.7	5.00	"	33.3	ND	77.1	30-120		30	
Benzo (k) fluoranthene	24.0	5.00	"	33.3	ND	71.9	30-120		30	
Benzo (a) pyrene	24.3	5.00	"	33.3	ND	72.9	30-120		30	
Chrysene	24.2	5.00	"	33.3	ND	72.6	30-120		30	
Dibenz (a,h) anthracene	24.6	10.0	"	33.3	ND	73.7	30-120		30	
Fluoranthene	26.9	5.00	"	33.3	ND	80.7	30-120		30	
Fluorene	25.6	5.00	"	33.3	ND	76.7	30-120		30	
Indeno (1,2,3-cd) pyrene	24.7	10.0	"	33.3	ND	74.1	30-120		30	
Naphthalene	44.4	5.00	"	33.3	ND	133	30-120		30	
Pyrene	24.2	5.00	"	33.3	ND	72.5	30-120		30	
Surrogate: Nitrobenzene-d5	18.4		"	33.3		55.1	30-120			
Surrogate: 2-Fluorobiphenyl	29.9		"	33.3		89.6	30-120			
Surrogate: 2,4,6-Tribromophenol	28.7		"	33.3		86.2	30-120			
Surrogate: Terphenyl-d14	30.2		"	33.3		90.5	30-120			

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Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**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 1041804 - EPA 3550A**

Matrix Spike Dup (1041804-MSD1)		Source: R104132-01			Prepared: 04/22/11		Analyzed: 04/23/11			
Acenaphthene	24.7	5.00	ug/kg	33.3	ND	74.2	30-120	4.83	30	
Anthracene	25.9	5.00	"	33.3	ND	77.6	30-120	2.24	30	
Benzo (a) anthracene	24.1	5.00	"	33.3	ND	72.4	30-120	5.22	30	
Benzo (b) fluoranthene	25.1	5.00	"	33.3	ND	75.4	30-120	2.25	30	
Benzo (k) fluoranthene	24.6	5.00	"	33.3	ND	73.9	30-120	2.69	30	
Benzo (a) pyrene	24.1	5.00	"	33.3	ND	72.4	30-120	0.668	30	
Chrysene	27.3	5.00	"	33.3	ND	81.8	30-120	11.9	30	
Dibenz (a,h) anthracene	24.1	10.0	"	33.3	ND	72.2	30-120	2.00	30	
Fluoranthene	27.5	5.00	"	33.3	ND	82.6	30-120	2.31	30	
Fluorene	26.2	5.00	"	33.3	ND	78.7	30-120	2.63	30	
Indeno (1,2,3-cd) pyrene	27.6	10.0	"	33.3	ND	82.8	30-120	11.1	30	
Naphthalene	45.0	5.00	"	33.3	ND	135	30-120	1.29	30	
Pyrene	26.1	5.00	"	33.3	ND	78.2	30-120	7.63	30	
Surrogate: Nitrobenzene-d5	18.3		"	33.3		54.9	30-120			
Surrogate: 2-Fluorobiphenyl	30.1		"	33.3		90.3	30-120			
Surrogate: 2,4,6-Tribromophenol	25.1		"	33.3		75.3	30-120			
Surrogate: Terphenyl-d14	30.9		"	33.3		92.6	30-120			

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Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**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

**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 1041903 - EPA 3550A**

<b>Blank (1041903-BLK1)</b>				Prepared: 04/19/11 Analyzed: 04/20/11						
C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	14.0		"	12.5		112	88.8-124			
<b>Blank (1041903-BLK2)</b>				Prepared: 04/19/11 Analyzed: 04/20/11						
C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	13.9		"	12.5		111	88.8-124			
<b>LCS (1041903-BS1)</b>				Prepared: 04/19/11 Analyzed: 04/20/11						
C10-C28 (DRO)	459	50	mg/kg	501		91.6	81.4-129		9.26	
<b>LCS (1041903-BS2)</b>				Prepared: 04/19/11 Analyzed: 04/20/11						
C10-C28 (DRO)	468	50	mg/kg	501		93.5	81.4-129		9.26	
<b>LCS Dup (1041903-BSD1)</b>				Prepared: 04/19/11 Analyzed: 04/20/11						
C10-C28 (DRO)	487	50	mg/kg	501		97.2	81.4-129	5.93	9.26	
<b>LCS Dup (1041903-BSD2)</b>				Prepared: 04/19/11 Analyzed: 04/21/11						
C10-C28 (DRO)	524	50	mg/kg	501		105	81.4-129	11.1	9.26	
<b>Matrix Spike (1041903-MS1)</b>				Source: R104100-02 Prepared: 04/19/11 Analyzed: 04/21/11						
C10-C28 (DRO)	488	50	mg/kg	501	ND	97.4	77.8-133		8.48	
<b>Matrix Spike (1041903-MS2)</b>				Source: R104108-01 Prepared: 04/19/11 Analyzed: 04/21/11						
C10-C28 (DRO)	463	50	mg/kg	501	15.0	89.5	77.8-133		8.48	
<b>Matrix Spike Dup (1041903-MSD1)</b>				Source: R104100-02 Prepared: 04/19/11 Analyzed: 04/21/11						
C10-C28 (DRO)	468	50	mg/kg	501	ND	93.4	77.8-133	4.16	8.48	

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4600 West 60th Avenue  
Arvada CO, 80003

Project: BBC - Socialty 11A-28-692 Pipeline ROW  
Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**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 1041903 - EPA 3550A**

**Matrix Spike Dup (1041903-MSD2)**

**Source: R104108-01**

Prepared: 04/19/11

Analyzed: 04/21/11

C10-C28 (DRO)	450	50	mg/kg	501	15.0	86.9	77.8-133	2.87	8.48
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4600 West 60th Avenue  
Arvada CO, 80003

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**Reported:**  
04/27/11 20:12

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

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

**Batch 1041904 - EPA 5030 Soil MS**

**Blank (1041904-BLK1)**

Prepared: 04/19/11 Analyzed: 04/20/11

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	0.0478		"	0.0400		119	67.4-143			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0439		"	0.0400		110	78.4-125			

**Blank (1041904-BLK2)**

Prepared: 04/19/11 Analyzed: 04/20/11

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	0.0486		"	0.0400		122	67.4-143			
Surrogate: Toluene-d8	0.0438		"	0.0400		109	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0449		"	0.0400		112	78.4-125			

**LCS (1041904-BS1)**

Prepared: 04/19/11 Analyzed: 04/20/11

Benzene	0.119	0.0050	mg/kg	0.100		119	61-139		11.1	
Toluene	0.113	0.0050	"	0.100		113	64-132		10.9	
Ethylbenzene	0.105	0.0050	"	0.100		105	68.7-135		20	
m,p-Xylene	0.215	0.010	"	0.200		108	70.4-129		20	
o-Xylene	0.0998	0.0050	"	0.100		99.8	66.9-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0500		"	0.0400		125	67.4-143			
Surrogate: Toluene-d8	0.0439		"	0.0400		110	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0440		"	0.0400		110	78.4-125			

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Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**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 1041904 - EPA 5030 Soil MS**

**LCS (1041904-BS2)**

Prepared: 04/19/11 Analyzed: 04/20/11

Benzene	0.121	0.0050	mg/kg	0.100	121	61-139	11.1
Toluene	0.114	0.0050	"	0.100	114	64-132	10.9
Ethylbenzene	0.105	0.0050	"	0.100	105	68.7-135	20
m,p-Xylene	0.211	0.010	"	0.200	105	70.4-129	20
o-Xylene	0.0987	0.0050	"	0.100	98.7	66.9-126	20
Surrogate: 1,2-Dichloroethane-d4	0.0510		"	0.0400	128	67.4-143	
Surrogate: Toluene-d8	0.0440		"	0.0400	110	77.3-114	
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400	107	78.4-125	

**LCS Dup (1041904-BSD1)**

Prepared: 04/19/11 Analyzed: 04/20/11

Benzene	0.122	0.0050	mg/kg	0.100	122	61-139	2.96	11.1
Toluene	0.116	0.0050	"	0.100	116	64-132	2.07	10.9
Ethylbenzene	0.108	0.0050	"	0.100	108	68.7-135	3.21	20
m,p-Xylene	0.221	0.010	"	0.200	111	70.4-129	2.83	20
o-Xylene	0.101	0.0050	"	0.100	101	66.9-126	1.05	20
Surrogate: 1,2-Dichloroethane-d4	0.0492		"	0.0400	123	67.4-143		
Surrogate: Toluene-d8	0.0440		"	0.0400	110	77.3-114		
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400	105	78.4-125		

**LCS Dup (1041904-BSD2)**

Prepared: 04/19/11 Analyzed: 04/20/11

Benzene	0.121	0.0050	mg/kg	0.100	121	61-139	0.347	11.1
Toluene	0.112	0.0050	"	0.100	112	64-132	1.33	10.9
Ethylbenzene	0.107	0.0050	"	0.100	107	68.7-135	1.86	20
m,p-Xylene	0.217	0.010	"	0.200	108	70.4-129	2.82	20
o-Xylene	0.102	0.0050	"	0.100	102	66.9-126	3.11	20
Surrogate: 1,2-Dichloroethane-d4	0.0486		"	0.0400	122	67.4-143		
Surrogate: Toluene-d8	0.0443		"	0.0400	111	77.3-114		
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400	106	78.4-125		

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**Reported:**  
04/27/11 20:12

**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 1041904 - EPA 5030 Soil MS**

Matrix Spike (1041904-MS1)		Source: R104101-02			Prepared: 04/19/11		Analyzed: 04/20/11			
Benzene	0.120	0.0050	mg/kg	0.100	0.0119	108	42.9-137		17.9	
Toluene	0.115	0.0050	"	0.100	0.0201	94.6	42.6-130		11.9	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	39-133		20	
m,p-Xylene	0.213	0.010	"	0.200	0.0146	99.0	34.7-134		20	
o-Xylene	0.0994	0.0050	"	0.100	0.00309	96.3	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0509		"	0.0400		127	67.4-143			
Surrogate: Toluene-d8	0.0443		"	0.0400		111	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0438		"	0.0400		109	78.4-125			

Matrix Spike (1041904-MS2)		Source: R104108-01			Prepared: 04/19/11		Analyzed: 04/20/11			
Benzene	0.122	0.0050	mg/kg	0.100	ND	122	42.9-137		17.9	
Toluene	0.114	0.0050	"	0.100	ND	114	42.6-130		11.9	
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	39-133		20	
m,p-Xylene	0.206	0.010	"	0.200	ND	103	34.7-134		20	
o-Xylene	0.100	0.0050	"	0.100	ND	100	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0546		"	0.0400		136	67.4-143			
Surrogate: Toluene-d8	0.0441		"	0.0400		110	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0452		"	0.0400		113	78.4-125			

Matrix Spike Dup (1041904-MSD1)		Source: R104101-02			Prepared: 04/19/11		Analyzed: 04/20/11			
Benzene	0.118	0.0050	mg/kg	0.100	0.0119	106	42.9-137	1.84	17.9	
Toluene	0.111	0.0050	"	0.100	0.0201	91.3	42.6-130	2.89	11.9	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	39-133	2.71	20	
m,p-Xylene	0.203	0.010	"	0.200	0.0146	94.1	34.7-134	4.70	20	
o-Xylene	0.0975	0.0050	"	0.100	0.00309	94.4	41.3-126	1.89	20	
Surrogate: 1,2-Dichloroethane-d4	0.0527		"	0.0400		132	67.4-143			
Surrogate: Toluene-d8	0.0432		"	0.0400		108	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0440		"	0.0400		110	78.4-125			

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.



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

Project: BBC - Socialty 11A-28-692 Pipeline ROW

Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**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 1041904 - EPA 5030 Soil MS**

Matrix Spike Dup (1041904-MSD2)		Source: R104108-01			Prepared: 04/19/11		Analyzed: 04/20/11			
Benzene	0.122	0.0050	mg/kg	0.100	ND	122	42.9-137	0.270	17.9	
Toluene	0.115	0.0050	"	0.100	ND	115	42.6-130	1.23	11.9	
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	39-133	2.11	20	
m,p-Xylene	0.207	0.010	"	0.200	ND	104	34.7-134	0.683	20	
o-Xylene	0.100	0.0050	"	0.100	ND	100	41.3-126	0.209	20	
Surrogate: 1,2-Dichloroethane-d4	0.0558		"	0.0400		140	67.4-143			
Surrogate: Toluene-d8	0.0447		"	0.0400		112	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0452		"	0.0400		113	78.4-125			

Summit Scientific

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW

Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

**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 1042105 - General Preparation**

<b>Duplicate (1042105-DUP1)</b>		<b>Source: R104100-01</b>			Prepared & Analyzed: 04/22/11					
pH	8.7		pH Units		8.6			1.28	20	

**Batch 1042106 - General Preparation**

<b>Duplicate (1042106-DUP1)</b>		<b>Source: R104100-01</b>			Prepared & Analyzed: 04/22/11					
Specific Conductance (EC)	1.39	0.00100	mmhos/cm		1.38			0.217	20	

Summit Scientific

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

Project: BBC - Socialty 11A-28-692 Pipeline ROW

Project Number: 0273-11010  
Project Manager: Brian Dodek

**Reported:**  
04/27/11 20:12

### 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

---

Summit Scientific

A handwritten signature in black ink, appearing to be 'JD' or similar, with a long horizontal stroke extending to the right.

*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.*



06/30/10

## Technical Report for

**LT Environmental**

**Specialty 1 BBC1008**

**Accutest Job Number: T55001**

**Sampling Date: 06/21/10**

### Report to:

LT Environmental  
820 Megan Ave, Unit B  
Rifle, CO 81650  
aweinberg@ltenv.com; bdodek@ltenv.com;  
jjanicek@ltenv.com  
ATTN: Asher Weinberg

**Total number of pages in report: 18**



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.

*Paul K Canevaro*

**Paul Canevaro**  
**Laboratory Director**

**Client Service contact: Georgia Jones 713-271-4700**

Certifications: TX (T104704220-09C-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.



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Sample Summary

LT Environmental

Job No: T55001

Specialty 1 BBC1008

Sample Number	Collected		Matrix Code	Type	Client Sample ID
	Date	Time By			
T55001-1	06/21/10	14:45 JJ	06/23/10	SO Soil	BG04@12.5'

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



## Sample Results

## Report of Analysis

Report of Analysis

<b>Client Sample ID:</b>	BG04@12.5'	<b>Date Sampled:</b>	06/21/10
<b>Lab Sample ID:</b>	T55001-1	<b>Date Received:</b>	06/23/10
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.5
<b>Project:</b>	Specialty 1 BBC1008		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic <sup>a</sup>	6.0	0.56	mg/kg	5	06/28/10	06/29/10 ANJ	SW846 6020 <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: N:MA24547  
(2) Prep QC Batch: N:MP53399  
  
(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit



## Misc. Forms

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody

10165 Harwin Dr, Ste 150 Houston, TX 77036  
TEL: 713-271-4700 FAX: 713-271-4770  
[www.aacutest.com](http://www.aacutest.com)

[illegible]

## T55001: Chain of Custody

Page 1 of 3



# SAMPLE INSPECTION FORM

Accutest Job Number: T55001 Client: LT Environmental Date/Time Received: 6-23-10 0915  
 # of Coolers Received: 1 Thermometer #: IR-1 Temperature Adjustment Factor: +0.4°C  
 Cooler Temps: #1: 4.4°C #2: \_\_\_\_\_ #3: \_\_\_\_\_ #4: \_\_\_\_\_ #5: \_\_\_\_\_ #6: \_\_\_\_\_ #7: \_\_\_\_\_ #8: \_\_\_\_\_  
 Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other  
 Airbill Numbers: 8700 9644 9577

## COOLER INFORMATION

☐ Custody seal missing or not intact  
☐ Temperature criteria not met  
☐ Wet ice received in cooler

## CHAIN OF CUSTODY

☐ Chain of Custody not received  
☐ Sample D/T unclear or missing  
☐ Analyses unclear or missing  
☐ COC not properly executed

## SAMPLE INFORMATION

☐ Sample containers received broken  
☐ VOC vials have headspace  
☐ Sample labels missing or illegible  
☐ ID on COC does not match label(s)  
☐ D/T on COC does not match label(s)  
☐ Sample/Bottles rec'd but no analysis on COC  
☐ Sample listed on COC, but not received  
☐ Bottles missing for requested analysis  
☐ Insufficient volume for analysis  
☐ Sample received improperly preserved

## TRIP BLANK INFORMATION

☐ Trip Blank on COC but not received  
☐ Trip Blank received but not on COC  
☐ Trip Blank not intact  
☐ Received Water Trip Blank  
☐ Received Soil TB

Number of Encores? \_\_\_\_\_  
 Number of 5035 kits? \_\_\_\_\_  
 Number of lab-filtered metals? \_\_\_\_\_

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: Danue Huddleston 6-23-10

INFORMATION AND SAMPLE LABELING VERIFIED BY: GC 6-23-10

## CORRECTIVE ACTIONS

Client Representative Notified: \_\_\_\_\_ Date: \_\_\_\_\_

By Accutest Representative: \_\_\_\_\_ Via: Phone Email

Client Instructions:

i:\mwalker\forms\samplemanagement

T55001: Chain of Custody

Page 2 of 3

JOB #: 133001 DATE/TIME RECEIVED: 6-23-10 0915

JOB #: 133001 DATE/TIME RECEIVED: 6-23-10 0915

CLIENT: LT Environmental INITIALS: DRA

[illegible]

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

## T55001: Chain of Custody

Page 3 of 3



## Misc. Forms

### Custody Documents and Other Forms

(Accutest New Jersey)

---

Includes the following where applicable:

- Chain of Custody

# SUBCONTRACT COC

Page 1 of 1

**10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770**

[illegible]

## T55001: Chain of Custody

Page 1 of 2

## Accutest New Jersey



## Accutest Laboratories Sample Receipt Summary

Accutest Job Number: T55001

Client:

Immediate Client Services Action Required: No

Date / Time Received: 6/25/2010

Delivery Method:

Client Service Action Required at Login: No

Project:

No. Coolers: 1

Airbill #'s:

### Cooler Security

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### Cooler Temperature

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun                        |                          |
| 3. Cooler media:             | Ice (bag)                           |                          |

### Quality Control Preservation

Y or N

N/A

- |                                 |                                     |                          |                                     |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

### Sample Integrity - Documentation

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### Sample Integrity - Condition

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

### Sample Integrity - Instructions

Y or N N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments

Accutest Laboratories  
V: 732.329.0200

2235 US Highway 130  
F: 732.329.3499

Dayton, New Jersey  
www.accutest.com

**T55001: Chain of Custody**  
**Page 2 of 2**



## Metals Analysis

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### QC Data Summaries

(Accutest New Jersey)

---

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T55001  
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.  
Project: LTENCOR: Specialty 1 BBC1008

QC Batch ID: MP53399  
Matrix Type: SOLID

Methods: SW846 6020  
Units: mg/kg

Prep Date: 06/28/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	1.1	.52		
Antimony	0.25	.0085	.022		
Arsenic	0.50	.061	.11	0.048	<0.50
Barium	0.50	.017	.038		
Beryllium	0.25	.013	.03		
Boron	2.5	.29	.25		
Cadmium	0.25	.01	.016		
Calcium	130	12	3.1		
Chromium	2.0	.037	.29		
Cobalt	0.25	.004	.016		
Copper	2.0	.024	.036		
Iron	25	3.5	1.9		
Lead	0.25	.0055	.012		
Magnesium	130	1.2	1.4		
Manganese	0.25	.036	.02		
Molybdenum	0.50	.071	.096		
Nickel	2.0	.027	.026		
Potassium	130	2.5	3.9		
Selenium	0.50	.042	.058		
Silver	1.0	.0065	.022		
Sodium	130	5.9	1.3		
Strontium	0.50	.013	.0082		
Thallium	0.25	.012	.0051		
Tin	0.50	.039			
Titanium	0.50	.04	.27		
Uranium	0.50				
Vanadium	2.0	.24	.79		
Zinc	2.0	.25	.91		

Associated samples MP53399: T55001-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T55001  
 Account: ALGC - Accutest Laboratories Gulf Coast, Inc.  
 Project: LTENCOR: Specialty 1 BBC1008

QC Batch ID: MP53399  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 06/28/10

Metal	T55002-3 Original MS		Spikelot MPIRS1	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	3.2	429	401	106.2	75-125
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP53399: T55001-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T55001  
 Account: ALGC - Accutest Laboratories Gulf Coast, Inc.  
 Project: LTENCOR: Specialty 1 BBC1008

QC Batch ID: MP53399  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 06/28/10

Metal	T55002-3 Original	MSD	Spikelot MPIRS1	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	3.2	458	426	106.8	6.5	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP53399: T55001-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T55001  
 Account: ALGC - Accutest Laboratories Gulf Coast, Inc.  
 Project: LTENCOR: Specialty 1 BBC1008

QC Batch ID: MP53399  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 06/28/10

Metal	BSP Result	Spikelot MPIRS1	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	408	400	102.0	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP53399: T55001-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T55001  
 Account: ALGC - Accutest Laboratories Gulf Coast, Inc.  
 Project: LTENCOR: Specialty 1 BBC1008

QC Batch ID: MP53399  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: ug/l

Prep Date: 06/28/10

Metal	T55002-3			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic	32.3	33.5	3.9	0-10	
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP53399: T55001-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested