

Technical Report for

Confluence Energy

Grizzly Pad Cuttings

Grizzly Site Interim Reclamation

Accutest Job Number: D70069

Sampling Date: 04/23/15

Report to:


**Confluence Energy
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ATTN: Mark Mathis

Total number of pages in report: 73



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

A handwritten signature in black ink, appearing to read "Scott Heideman".

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY

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Test results relate only to samples analyzed.

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Sample Summary

Confluence Energy

Job No: D70069

Grizzly Pad Cuttings

Project No: Grizzly Site Interum Reclamation

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D70069-1	04/23/15	10:30 MJM	04/24/15	SO	Soil	CCA/BER COMPOSITE
D70069-1A	04/23/15	10:30 MJM	04/24/15	SO	Soil	CCA/BER COMPOSITE

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Confluence Energy

Job No D70069

Site: Grizzly Pad Cuttings

Report Date 5/4/2015 3:26:14 PM

On 04/24/2015, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 23.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D70069 was assigned to the project. The lab sample ID, client sample ID, and date 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 8260C

Matrix: SO

Batch ID: M:MSK2726

- The data for SW846 8260C meets quality control requirements.
- D70069-1: Analysis performed at Accutest Laboratories, Marlborough, MA.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix: SO

Batch ID: OP11651

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method SW846 8015B

Matrix: SO

Batch ID: GGB1609

- All samples were analyzed within the recommended method holding time.
- Sample(s) D70071-1MS, D70071-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix: SO

Batch ID: OP11638

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D70071-1MS, D70071-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix: AQ	Batch ID: MP15788
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- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D70037-1AMS, D70037-1AMSD, D70037-1ASDL were used as the QC samples for the metals analysis.

Matrix: SO	Batch ID: MP15786
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- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D70069-1MS, D70069-1MSD, D70069-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Lead, Selenium, Chromium, Nickel, Zinc are outside control limits for sample MP15786-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP15786-SD1 for Chromium,Zinc, Nickel: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix: SO	Batch ID: MP15787
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- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D70069-1MS, D70069-1MSD, D70069-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471B

Matrix: SO	Batch ID: MP15773
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- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D70069-1MS, D70069-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix: SO	Batch ID: GN29686
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- Sample(s) D70069-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM2540G-2011 M

Matrix: SO	Batch ID: GN29660
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- The data for SM2540G-2011 M meets quality control requirements.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO	Batch ID: GP15199
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- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D70069-1MSD, D70069-1DUP, D70069-1MS were used as the QC samples for the Chromium, Hexavalent analysis.
- The matrix spike (MS) recovery(s) and matrix spike duplicate (MSD) recovery(s) of Chromium, Hexavalent are outside control limits. Spike recovery indicates possible matrix interference.
- The duplicate RPD(s) for Chromium, Hexavalent are outside control limits for sample GP15199-D1. RPD acceptable due to low duplicate and sample concentrations.
- The RPD(s) for the MS and MSD recoveries of Chromium, Hexavalent are outside control limits for sample GP15199-S2. High RPD due to possible sample nonhomogeneity.

Wet Chemistry By Method SW846 3060A/7196A M

Matrix: SO	Batch ID: R27732
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- The data for SW846 3060A/7196A M meets quality control requirements.
- D70069-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045D

Matrix: SO	Batch ID: GN29653
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- The following samples were run outside of holding time for method SW846 9045D: D70069-1

Wet Chemistry By Method USDA HANDBOOK 60

Matrix: SO	Batch ID: MP15788
-------------------	--------------------------

- D70069-1A for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

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 D70069

Site: CONECOK: Grizzly Pad Cuttings

Report Date 5/4/2015 9:41:38 AM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 04/23/2015 and were received at Accutest on 04/24/2015 properly preserved, at 1.5 Deg. C and intact. These Samples received an Accutest job number of D70069. 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.

Volatiles by GCMS By Method SW846 8260C

Matrix: SO

Batch ID: MSK2726

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D70069-1MS, D70069-1MSD were used as the QC samples indicated.

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(D70069).

Summary of Hits

Job Number: D70069
 Account: Confluence Energy
 Project: Grizzly Pad Cuttings
 Collected: 04/23/15



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D70069-1 CCA/BER COMPOSITE

Benzo(a)anthracene	50.2	27	13	ug/kg	SW846 8270C BY SIM
Benzo(b)fluoranthene	125	27	13	ug/kg	SW846 8270C BY SIM
Chrysene	336	27	13	ug/kg	SW846 8270C BY SIM
Fluoranthene	110	27	13	ug/kg	SW846 8270C BY SIM
Naphthalene	87.2	27	16	ug/kg	SW846 8270C BY SIM
Pyrene	275	27	13	ug/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)	2930	100	78	mg/kg	SW846-8015B
Arsenic	6.3	0.10		mg/kg	SW846 6020A
Barium	4580	5.2		mg/kg	SW846 6010C
Chromium	19.6	1.0		mg/kg	SW846 6010C
Copper	29.5	5.2		mg/kg	SW846 6010C
Lead	5.6	5.2		mg/kg	SW846 6010C
Nickel	19.9	3.1		mg/kg	SW846 6010C
Zinc	75.8	3.1		mg/kg	SW846 6010C
Specific Conductivity	4460	1.0		umhos/cm	SM 2510B-2011 MOD
Chromium, Trivalent ^a	19.6	2.0		mg/kg	SW846 3060A/7196A M
Redox Potential Vs H2	334			mv	ASTM D1498-76M
pH	9.27			su	SW846 9045D

D70069-1A CCA/BER COMPOSITE

Calcium	193	2.0		mg/l	SW846 6010C
Magnesium	20.7	1.0		mg/l	SW846 6010C
Sodium	861	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	15.7			ratio	USDA HANDBOOK 60

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

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

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: CCA/BER COMPOSITE Lab Sample ID: D70069-1 Matrix: SO - Soil Method: SW846 8260C Project: Grizzly Pad Cuttings	Date Sampled: 04/23/15 Date Received: 04/24/15 Percent Solids: 95.2
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	K87418.D	1	05/01/15	AMA	n/a	n/a	M:MSK2726
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	7.81 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	35	26	ug/kg	
108-88-3	Toluene	ND	350	28	ug/kg	
100-41-4	Ethylbenzene	ND	140	26	ug/kg	
1330-20-7	Xylene (total)	ND	140	24	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		65-141%
2037-26-5	Toluene-D8	99%		65-129%
460-00-4	4-Bromofluorobenzene	93%		63-137%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit 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: CCA/BER COMPOSITE	
Lab Sample ID: D70069-1	Date Sampled: 04/23/15
Matrix: SO - Soil	Date Received: 04/24/15
Method: SW846 8270C BY SIM SW846 3546	Percent Solids: 95.2
Project: Grizzly Pad Cuttings	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G23521.D	1	04/29/15	DC	04/29/15	OP11651	E3G1174
Run #2							

Run #	Initial Weight	Final Volume
Run #1	5.10 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	27	13	ug/kg	
120-12-7	Anthracene	ND	27	13	ug/kg	
56-55-3	Benzo(a)anthracene	50.2	27	13	ug/kg	
205-99-2	Benzo(b)fluoranthene	125	27	13	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	27	13	ug/kg	
50-32-8	Benzo(a)pyrene	ND	27	13	ug/kg	
218-01-9	Chrysene	336	27	13	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	27	13	ug/kg	
206-44-0	Fluoranthene	110	27	13	ug/kg	
86-73-7	Fluorene	ND	27	13	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	27	21	ug/kg	
91-20-3	Naphthalene	87.2	27	16	ug/kg	
129-00-0	Pyrene	275	27	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61%		11-164%
321-60-8	2-Fluorobiphenyl	76%		14-138%
1718-51-0	Terphenyl-d14	110%		35-139%

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

4.1
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Report of Analysis

Client Sample ID: CCA/BER COMPOSITE Lab Sample ID: D70069-1 Matrix: SO - Soil Method: SW846 8015B Project: Grizzly Pad Cuttings	Date Sampled: 04/23/15 Date Received: 04/24/15 Percent Solids: 95.2
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB29907.D	1	04/27/15	EP	n/a	n/a	GGB1609
Run #2							

Run #	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)	ND	11	5.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	110%		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

4.1
4

Report of Analysis

Client Sample ID: CCA/BER COMPOSITE Lab Sample ID: D70069-1 Matrix: SO - Soil Method: SW846-8015B SW846 3546 Project: Grizzly Pad Cuttings	Date Sampled: 04/23/15 Date Received: 04/24/15 Percent Solids: 95.2
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD44648.D	10	04/30/15	GN	04/27/15	OP11638	GFD1924
Run #2							

Run #	Initial Weight	Final Volume
Run #1	20.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	2930	100	78	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	96%		20-130%		

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

4.1
4

Report of Analysis

Client Sample ID: CCA/BER COMPOSITE Lab Sample ID: D70069-1 Matrix: SO - Soil Project: Grizzly Pad Cuttings	Date Sampled: 04/23/15 Date Received: 04/24/15 Percent Solids: 95.2
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Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	6.3	0.10	mg/kg	5	04/28/15	05/01/15 NT	SW846 6020A ⁴	SW846 3050B ⁷
Barium	4580	5.2	mg/kg	5	04/28/15	04/29/15 KV	SW846 6010C ³	SW846 3050B ⁶
Cadmium	< 1.0	1.0	mg/kg	1	04/28/15	04/28/15 JB	SW846 6010C ²	SW846 3050B ⁶
Chromium	19.6	1.0	mg/kg	1	04/28/15	04/28/15 JB	SW846 6010C ²	SW846 3050B ⁶
Copper	29.5	5.2	mg/kg	5	04/28/15	04/29/15 KV	SW846 6010C ³	SW846 3050B ⁶
Lead	5.6	5.2	mg/kg	1	04/28/15	04/28/15 JB	SW846 6010C ²	SW846 3050B ⁶
Mercury	< 0.086	0.086	mg/kg	1	04/27/15	04/28/15 LH	SW846 7471B ¹	SW846 7471B ⁵
Nickel	19.9	3.1	mg/kg	1	04/28/15	04/28/15 JB	SW846 6010C ²	SW846 3050B ⁶
Selenium	< 5.2	5.2	mg/kg	1	04/28/15	04/29/15 KV	SW846 6010C ³	SW846 3050B ⁶
Silver	< 3.1	3.1	mg/kg	1	04/28/15	04/28/15 JB	SW846 6010C ²	SW846 3050B ⁶
Zinc	75.8	3.1	mg/kg	1	04/28/15	04/28/15 JB	SW846 6010C ²	SW846 3050B ⁶

- (1) Instrument QC Batch: MA6058
- (2) Instrument QC Batch: MA6061
- (3) Instrument QC Batch: MA6062
- (4) Instrument QC Batch: MA6072
- (5) Prep QC Batch: MP15773
- (6) Prep QC Batch: MP15786
- (7) Prep QC Batch: MP15787

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: CCA/BER COMPOSITE Lab Sample ID: D70069-1 Matrix: SO - Soil Project: Grizzly Pad Cuttings	Date Sampled: 04/23/15 Date Received: 04/24/15 Percent Solids: 95.2
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General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	95.2		%	1	04/27/15	SWT	SM2540G-2011 M
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	4460	1.0	umhos/cm	1	04/28/15	JD	SM 2510B-2011 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	05/02/15	AK	SW846 3060A/7196A
Chromium, Trivalent ^a	19.6	2.0	mg/kg	1	05/02/15	AK	SW846 3060A/7196A M
Redox Potential Vs H2	334		mv	1	04/29/15	JD	ASTM D1498-76M
pH	9.27		su	1	04/27/15 08:45	TB	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: CCA/BER COMPOSITE	Date Sampled: 04/23/15
Lab Sample ID: D70069-1A	Date Received: 04/24/15
Matrix: SO - Soil	Percent Solids: 95.2
Project: Grizzly Pad Cuttings	

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	193	2.0	mg/l	1	04/28/15	04/28/15 JB	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	20.7	1.0	mg/l	1	04/28/15	04/28/15 JB	SW846 6010C ¹	SW846 3010A/M ²
Sodium	861	2.0	mg/l	1	04/28/15	04/28/15 JB	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA6061

(2) Prep QC Batch: MP15788

RL = Reporting Limit

4.2
4

Report of Analysis

Client Sample ID: CCA/BER COMPOSITE	Date Sampled: 04/23/15
Lab Sample ID: D70069-1A	Date Received: 04/24/15
Matrix: SO - Soil	Percent Solids: 95.2
Project: Grizzly Pad Cuttings	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	15.7		ratio	1	04/28/15 17:19	JB	USDA HANDBOOK 60

(a) Calculated as: $(Na \text{ meq/L}) / \sqrt{[(Ca \text{ meq/L}) + (Mg \text{ meq/L})/2]}$

RL = Reporting Limit

4.2
4

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

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 # D70069

Client / Reporting Information: Confluence Energy, 1809 Hwy 9 - PO Box 1387, Kremmling Colorado. Project Information: Grizzly pad cuttings, Walden CO. Requested Analysis: CO Table 910. Matrix Codes: DW - Drinking Water, GW - Ground Water, etc.

Turnaround Time (Business days): 1 Day Emergency. Data Deliverable Information: Commercial "A" (Level 1), Commercial "B" (Level 2), etc.

Sample Custody must be documented below each time samples change possession, including courier delivery. Includes fields for Relinquished by, Date Time, Received By, and Date Time for multiple samples.

5.1 5

D70069: Chain of Custody

Page 1 of 2

Accutest Job Number: D70069 **Client:** CONFLUENCE ENERGY **Project:** GRIZZLY PAD CUTTINGS
Date / Time Received: 4/24/2015 4:35:00 PM **Delivery Method:** _____ **Airbill #'s:** hd
Cooler Temps (Initial/Adjusted): #1: (23.1/23.1):

Cooler Security

	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
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

	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	IR Gun;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
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"/>

Comments

Sample Integrity - Documentation

	<u>Y</u>	<u>or</u>	<u>N</u>
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

	<u>Y</u>	<u>or</u>	<u>N</u>
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

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
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"/>

5.1
5

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D70069
 Account: CONECOK Confluence Energy
 Project: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11651-MB	3G23512.D	1	04/29/15	DC	04/29/15	OP11651	E3G1174

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D70069-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	2.1	ug/kg	
120-12-7	Anthracene	ND	4.3	2.1	ug/kg	
56-55-3	Benzo(a)anthracene	ND	4.3	2.1	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	4.3	2.1	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	4.3	2.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	4.3	2.1	ug/kg	
218-01-9	Chrysene	ND	4.3	2.1	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	4.3	2.1	ug/kg	
206-44-0	Fluoranthene	ND	4.3	2.1	ug/kg	
86-73-7	Fluorene	ND	4.3	2.1	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.3	3.3	ug/kg	
91-20-3	Naphthalene	ND	4.3	2.6	ug/kg	
129-00-0	Pyrene	ND	4.3	2.1	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	85% 11-164%
321-60-8	2-Fluorobiphenyl	84% 14-138%
1718-51-0	Terphenyl-d14	106% 35-139%

Blank Spike/Blank Spike Duplicate Summary

Job Number: D70069
 Account: CONECOK Confluence Energy
 Project: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11651-BS	3G23513.D	1	04/29/15	DC	04/29/15	OP11651	E3G1174
OP11651-BSD	3G23514.D	1	04/29/15	DC	04/29/15	OP11651	E3G1174

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D70069-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	83.3	75.7	91	70.3	84	7	42-130/30
120-12-7	Anthracene	83.3	90.0	108	88.2	106	2	45-130/30
56-55-3	Benzo(a)anthracene	83.3	90.9	109	92.2	111	1	49-137/30
205-99-2	Benzo(b)fluoranthene	83.3	83.3	100	85.7	103	3	43-146/30
207-08-9	Benzo(k)fluoranthene	83.3	89.2	107	85.9	103	4	27-146/30
50-32-8	Benzo(a)pyrene	83.3	89.2	107	89.7	108	1	53-130/30
218-01-9	Chrysene	83.3	84.1	101	83.9	101	0	61-130/30
53-70-3	Dibenzo(a,h)anthracene	83.3	82.4	99	82.8	99	0	59-130/30
206-44-0	Fluoranthene	83.3	89.8	108	90.6	109	1	48-130/30
86-73-7	Fluorene	83.3	82.4	99	77.9	93	6	44-130/30
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	79.7	96	80.6	97	1	58-130/30
91-20-3	Naphthalene	83.3	78.1	94	71.1	85	9	56-130/30
129-00-0	Pyrene	83.3	91.0	109	92.1	111	1	53-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	88%	79%	11-164%
321-60-8	2-Fluorobiphenyl	88%	78%	14-138%
1718-51-0	Terphenyl-d14	101%	99%	35-139%

* = Outside of Control Limits.

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D70069
Account: CONECOK Confluence Energy
Project: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1609-MB	GB29893.D	1	04/27/15	EP	n/a	n/a	GGB1609

The QC reported here applies to the following samples:

Method: SW846 8015B

D70069-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	9.9	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	103% 60-140%

7.1.1
7

Blank Spike Summary

Job Number: D70069
Account: CONECOK Confluence Energy
Project: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1609-BS	GB29894.D	1	04/27/15	EP	n/a	n/a	GGB1609

The QC reported here applies to the following samples:

Method: SW846 8015B

D70069-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	109	107	98	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D70069
 Account: CONECOK Confluence Energy
 Project: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D70071-1MS	GB29896.D	1	04/27/15	EP	n/a	n/a	GGB1609
D70071-1MSD	GB29897.D	1	04/27/15	EP	n/a	n/a	GGB1609
D70071-1	GB29895.D	1	04/27/15	EP	n/a	n/a	GGB1609

The QC reported here applies to the following samples:

Method: SW846 8015B

D70069-1

CAS No.	Compound	D70071-1 mg/kg	Spike Q	mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	14.2	146	153	95	146	150	93	2	70-130/30	

CAS No.	Surrogate Recoveries	MS	MSD	D70071-1	Limits
120-82-1	1,2,4-Trichlorobenzene	116%	111%	111%	60-140%

* = Outside of Control Limits.

7.3.1
7

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D70069
Account: CONECOK Confluence Energy
Project: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11638-MB	FH031380.D	1	04/27/15	GN	04/27/15	OP11638	GFH1357

The QC reported here applies to the following samples:

Method: SW846-8015B

D70069-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	10	7.5	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	116% 20-130%

Blank Spike Summary

Job Number: D70069
Account: CONECOK Confluence Energy
Project: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11638-BS	FH031382.D	1	04/27/15	GN	04/27/15	OP11638	GFH1357

The QC reported here applies to the following samples:

Method: SW846-8015B

D70069-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	250	165	66	32-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	92%	20-130%

8.2.1

8

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D70069
 Account: CONECOK Confluence Energy
 Project: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11638-MS	FH031384.D	1	04/27/15	GN	04/27/15	OP11638	GFH1357
OP11638-MSD	FH031386.D	1	04/27/15	GN	04/27/15	OP11638	GFH1357
D70071-1	FH031388.D	1	04/27/15	GN	04/27/15	OP11638	GFH1357

The QC reported here applies to the following samples:

Method: SW846-8015B

D70069-1

CAS No.	Compound	D70071-1 mg/kg	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	273	292	681	140	293	630	122	8	20-152/54

CAS No.	Surrogate Recoveries	MS	MSD	D70071-1	Limits
84-15-1	o-Terphenyl	108%	92%	69%	20-130%

8.3.1
8

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

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: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15773
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 04/27/15

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.083	.00088	.0067	0.000083	<0.083

Associated samples MP15773: D70069-1

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: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15773
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 04/27/15

Metal	D70069-1 Original MS	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.0	0.38	0.339	112.1	75-125
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Associated samples MP15773: D70069-1

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: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15773
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 04/27/15

Metal	D70069-1 Original MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit	
Mercury	0.0	0.36	0.328	109.7	5.4	20

Associated samples MP15773: D70069-1

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: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15773
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 04/27/15

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.31	0.333	93.0	80-120

Associated samples MP15773: D70069-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15786
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/28/15

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	1.1	1.7		
Antimony	3.0	.21	.82		
Arsenic	2.5	.38	2.1		
Barium	1.0	.02	.03	0.19	<1.0
Beryllium	1.0	.09	.16		
Boron	5.0	.08	.29		
Cadmium	1.0	.02	.1	0.020	<1.0
Calcium	40	.24	9.6		
Chromium	1.0	.03	.07	0.050	<1.0
Cobalt	0.50	.05	.12		
Copper	1.0	.08	.48	0.14	<1.0
Iron	7.0	.15	.69		
Lead	5.0	.21	.6	0.090	<5.0
Lithium	0.50	.04	.07		
Magnesium	20	.68	3.9		
Manganese	0.50	.05	.07		
Molybdenum	1.0	.04	.36		
Nickel	3.0	.05	.24	-0.010	<3.0
Phosphorus	10	1.5	4.3		
Potassium	200	9.9	6		
Selenium	5.0	.71	1	-0.19	<5.0
Silicon	5.0	.47	.91		
Silver	3.0	.03	.05	0.030	<3.0
Sodium	40	.73	1.5		
Strontium	5.0	.001	.03		
Thallium	1.0	.18	.86		
Tin	5.0	1.2	1.2		
Titanium	1.0	.01	.27		
Uranium	5.0	.29	.44		
Vanadium	1.0	.04	.07		
Zinc	3.0	.04	.35	0.23	<3.0

Associated samples MP15786: D70069-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

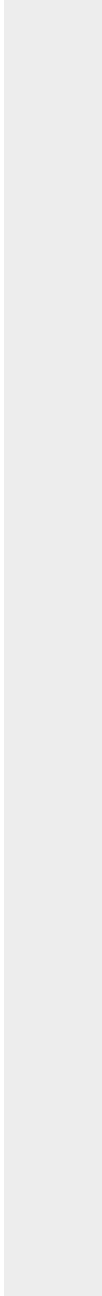
QC Batch ID: MP15786
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/28/15

Metal	RL	IDL	MDL	MB raw	final
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(anr) Analyte not requested



9.2.1
9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15786
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 04/28/15

Metal	D70069-1 Original MS		SpikeLot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	4580	4510	198	201.8(a)	75-125
Beryllium					
Boron					
Cadmium	0.90	47.7	49.5	94.5	75-125
Calcium					
Chromium	19.6	69.8	49.5	101.3	75-125
Cobalt					
Copper	29.5	79.6	49.5	101.3	75-125
Iron					
Lead	5.6	96.5	99.1	91.7	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	19.9	64.8	49.5	90.6	75-125
Phosphorus					
Potassium					
Selenium	2.2	101	99.1	99.7	75-125
Silicon					
Silver	0.0	16.6	19.8	83.8	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	75.8	126	49.5	101.3	75-125

Associated samples MP15786: D70069-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

9.2.2
 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15786
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/28/15

Metal	D70069-1 Original MS	SpikeLot ICPALL2	% Rec	QC Limits
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(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15786
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 04/28/15

Metal	D70069-1 Original MSD		SpikeLot ICPAL2 % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	4580	4690	202	287.1(a)	3.9	20
Beryllium						
Boron						
Cadmium	0.90	46.6	50.5	90.5	2.3	20
Calcium						
Chromium	19.6	68.3	50.5	96.4	2.2	20
Cobalt						
Copper	29.5	83.2	50.5	106.5	4.4	20
Iron						
Lead	5.6	94.9	101	88.4	1.7	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	19.9	63.0	50.5	85.3	2.8	20
Phosphorus						
Potassium						
Selenium	2.2	102	101	98.8	1.0	20
Silicon						
Silver	0.0	16.1	20.2	79.7	3.1	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	75.8	118	50.5	83.6	6.6	20

Associated samples MP15786: D70069-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

9.2.2
 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15786
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 04/28/15

Metal	D70069-1 Original MSD	Spike lot ICPALL2	% Rec	MSD RPD	QC Limit
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(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested
 (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15786
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 04/28/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	204	200	102.0	80-120
Beryllium				
Boron				
Cadmium	47.0	50	94.0	80-120
Calcium				
Chromium	52.4	50	104.8	80-120
Cobalt				
Copper	46.9	50	93.8	80-120
Iron				
Lead	96.2	100	96.2	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	46.5	50	93.0	80-120
Phosphorus				
Potassium				
Selenium	107	100	107.0	80-120
Silicon				
Silver	19.7	20	98.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	47.2	50	94.4	80-120

Associated samples MP15786: D70069-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

9.2.3
 9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

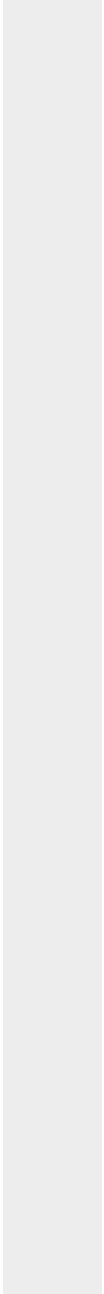
QC Batch ID: MP15786
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/28/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
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(anr) Analyte not requested



SERIAL DILUTION RESULTS SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15786
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 04/28/15

Metal	D70069-1 Original SDL 1:5		%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	44000	42400	7.5	0-10
Beryllium				
Boron				
Cadmium	8.70	9.00	3.4	0-10
Calcium				
Chromium	188	215	14.1*(a)	0-10
Cobalt				
Copper	284	270	4.4	0-10
Iron				
Lead	53.4	67.5	26.4 (b)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	191	227	18.3*(a)	0-10
Phosphorus				
Potassium				
Selenium	21.2	67.0	216.0(b)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	729	911	25.0*(a)	0-10

Associated samples MP15786: D70069-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

9.2.4
 9

SERIAL DILUTION RESULTS SUMMARY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15786
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 04/28/15

Metal	D70069-1	QC
	Original SDL 1:5 %DIF	Limits

- (anr) Analyte not requested
- (a) Serial dilution indicates possible matrix interference.
- (b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15787
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 04/28/15

Metal	RL	IDL	MDL	MB	
				raw	final
Arsenic	0.10	.0085	.024	-0.0088	<0.10

Associated samples MP15787: D70069-1

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: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15787
 Matrix Type: SOLID

Methods: SW846 6020A
 Units: mg/kg

Prep Date: 04/28/15

Metal	D70069-1 Original MS	Spikelot ICPALL2	% Rec	QC Limits
Arsenic	6.3	111	99.1	105.7 75-125

Associated samples MP15787: D70069-1

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: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15787
 Matrix Type: SOLID

Methods: SW846 6020A
 Units: mg/kg

Prep Date: 04/28/15

Metal	D70069-1 Original MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Arsenic	6.3	113	101	105.6	1.8 20

Associated samples MP15787: D70069-1

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: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15787
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 04/28/15

Metal	BSP Result	Spikelot ICPALL2	QC % Rec	QC Limits
Arsenic	96.2	100	96.2	80-120

Associated samples MP15787: D70069-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15787
Matrix Type: SOLID

Methods: SW846 6020A
Units: ug/l

Prep Date: 04/28/15

Metal	D70069-1 Original	SDL 5:25	%DIF	QC Limits
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Arsenic 60.7 59.6 1.8 0-10

Associated samples MP15787: D70069-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

QC Batch ID: MP15788
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/28/15

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	55	65		
Antimony	150	11	44		
Arsenic	130	19	60		
Barium	50	1	2		
Beryllium	50	4.5	8		
Boron	250	4	18		
Cadmium	50	1	4		
Calcium	2000	12	50	0.50	<2000
Chromium	50	1.5	3.5		
Cobalt	25	2.5	6		
Copper	50	4	19		
Iron	350	7.5	35		
Lead	250	11	25		
Lithium	25	2	3.5		
Magnesium	1000	34	200	15.5	<1000
Manganese	25	2.5	4.5		
Molybdenum	50	2	18		
Nickel	150	2.5	14		
Phosphorus	500	75	170		
Potassium	5000	500	360		
Selenium	250	36	50		
Silicon	250	24	42		
Silver	150	1.5	3		
Sodium	2000	37	70	134	<2000
Strontium	25	.05	1.5		
Thallium	50	9	40		
Tin	250	60	60		
Titanium	50	.5	14		
Uranium	250	15	22		
Vanadium	50	2	3		
Zinc	150	2	18		

Associated samples MP15788: D70069-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

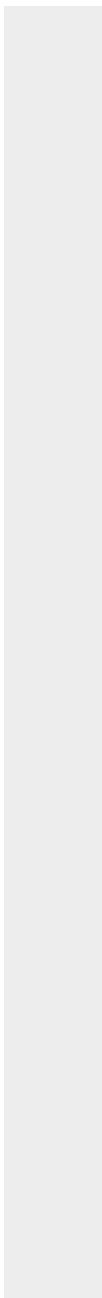
QC Batch ID: MP15788
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/28/15

Metal	RL	IDL	MDL	MB raw	final
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(anr) Analyte not requested



9.4.1
9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15788
 Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
 Units: ug/l

Prep Date: 04/28/15

Metal	D70037-1A Original MS		Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	355000	490000	125000	108.0	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	145000	274000	125000	103.2	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	105000	236000	125000	104.8	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP15788: D70069-1A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

9.4.2
9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

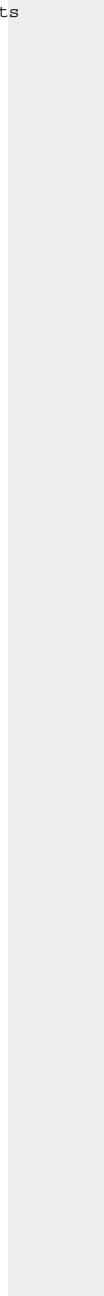
QC Batch ID: MP15788
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/28/15

Metal	D70037-1A Original MS	SpikeLot ICPAL2	% Rec	QC Limits
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(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15788
 Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
 Units: ug/l

Prep Date: 04/28/15

Metal	D70037-1A Original MSD		SpikeLot ICPALL2 % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	355000	497000	125000	113.6	1.4	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	145000	280000	125000	108.0	2.2	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	105000	241000	125000	108.8	2.1	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP15788: D70069-1A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

9.4.2
9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

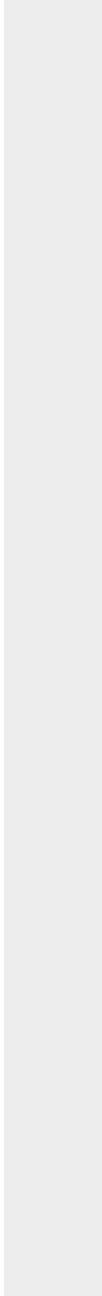
QC Batch ID: MP15788
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/28/15

Metal	D70037-1A Original MSD	SpikeLot ICPALL2	% Rec	MSD RPD	QC Limit
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(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested



9.4.2
9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15788
 Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
 Units: ug/l

Prep Date: 04/28/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	135000	125000	108.0	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	128000	125000	102.4	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	129000	125000	103.2	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP15788: D70069-1A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

9.4.3
 9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

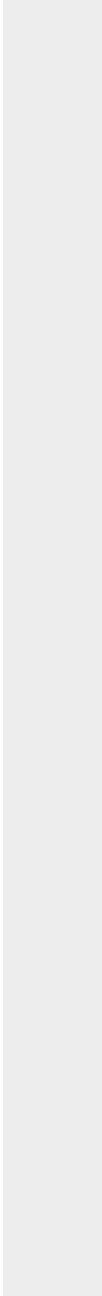
QC Batch ID: MP15788
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/28/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
-------	---------------	---------------------	-------	--------------

(anr) Analyte not requested



SERIAL DILUTION RESULTS SUMMARY

Login Number: D70069
 Account: CONECOK - Confluence Energy
 Project: Grizzly Pad Cuttings

QC Batch ID: MP15788
 Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
 Units: ug/l

Prep Date: 04/28/15

Metal	D70037-1A Original SDL 1:5		%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	70900	74500	4.9	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	29000	30400	4.9	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	21000	22100	5.3	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP15788: D70069-1A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

9.4.4
 9

SERIAL DILUTION RESULTS SUMMARY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

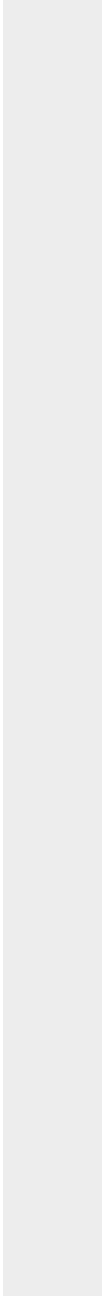
QC Batch ID: MP15788
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/28/15

Metal	D70037-1A	QC
	Original SDL 1:5 %DIF	Limits

(anr) Analyte not requested



9.4.4
9

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP15199/GN29739	1.0	0.0	mg/kg	59.8	51.1	85.4	80-120%
Specific Conductivity	GP15153/GN29667			umhos/cm	9988	9880	98.9	90-110%
pH	GN29653			su	8.00	8.01	100.1	99.1-100.9%

Associated Samples:
Batch GN29653: D70069-1
Batch GP15153: D70069-1
Batch GP15199: D70069-1
(*) Outside of QC limits

10.1
10

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP15199/GN29739	D70069-1	mg/kg	0.0	0.0	200.0(a)	0-20%
Redox Potential Vs H2	GN29686	D70069-1	mv	334	342	2.4	0-20%

Associated Samples:

Batch GN29686: D70069-1

Batch GP15199: D70069-1

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP15199/GN29739	D70069-1	mg/kg	0.0	40.0	0.0	0.4(a)	75-125%

Associated Samples:

Batch GP15199: D70069-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D70069
Account: CONECOK - Confluence Energy
Project: Grizzly Pad Cuttings

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GP15199/GN29739	D70069-1	mg/kg	0.0	40.0	0.0	38.6(a)	20%

Associated Samples:

Batch GP15199: D70069-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) High RPD due to possible sample nonhomogeneity.

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody





CHAIN OF CUSTODY

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

Accutest Job #:	D70069
Accutest Quote #:	0
AMS P.O. #:	
Project No.:	

Client Information			Subcontract Laboratory Information							Analytical Information						
Name Accutest Mountain States (AMS)			Name Accutest - New England							V8260BTX						
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: Scott Heideman			Contact: Sample Management													
Any questions contact: Jeremy DeChant			Phone: (508) 481-6200													
Phone/Fax #: (303) 425-6021; (303) 425-6854																
			Collection			Preservation										
Field ID / Point of Collection	Date	Time	Matrix	# of bottles	PCCL	NaOH	HN03	42504	None	X						
D70069 -1	4/23/15	10:30 AM	SO	1												
-																
										11B						
Turnaround Information			Data Deliverable Information							Comments / Remarks						
<input checked="" type="checkbox"/> 3 - 5 Business Day Rush <input type="checkbox"/> Other <u>4</u> (Days)			Approved By: _____ <input type="checkbox"/> Commercial "A" <input type="checkbox"/> PDF <input type="checkbox"/> Commercial "B" <input type="checkbox"/> Compact Disk Deliverable <input type="checkbox"/> Commercial "BN" <input type="checkbox"/> Electronic Delivery: _____ <input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> State Forms <input type="checkbox"/> Full Tier 1 <input type="checkbox"/> Other (Specify) _____							Please use Colorado regulations and RLs.						
10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.																
Sample Custody must be documented below each time samples change possession, including courier delivery.									For Subcontract Laboratory Use Only							
Relinquished by:	Date & Time:	Received By:	Date & Time:	Seal #:	Headspace:											
1	4/23/15	1	1	1	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>											
Relinquished by:	Date & Time:	Received By:	Date & Time:	2	Preserved where applicable:											
2	4/28/15 9:30	2	2	2	<input type="checkbox"/>											
Relinquished by:	Date & Time:	Received By:	Date & Time:	3	Temperature °C <u>1.5</u> On Ice <input checked="" type="checkbox"/>											
3		3	3	3												

D70069: Chain of Custody

Page 1 of 2

Accutest Labs of New England, Inc.

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D70069 **Client:** AMS **Project:** SUB
Date / Time Received: 4/28/2015 9:30:00 AM **Delivery Method:** _____ **Airbill #'s:** _____
Cooler Temps (Initial/Adjusted): #1: (1.5/1.5);

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. Thermometer ID: G1;
3. Cooler media: Ice (Bag)
4. No. Coolers: 1

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 recvd for analysis:
4. Compositing instructions clear:
5. Filtering instructions clear:

Comments

11.1
11

GC/MS Volatiles

QC Data Summaries

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D70069
Account: ALMS Accutest Mountain States
Project: CONECOK: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSK2726-MB	K87415.D	1	05/01/15	JM	n/a	n/a	MSK2726

The QC reported here applies to the following samples:

Method: SW846 8260C

D70069-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	25	19	ug/kg	
100-41-4	Ethylbenzene	ND	100	19	ug/kg	
108-88-3	Toluene	ND	250	20	ug/kg	
1330-20-7	Xylene (total)	ND	100	17	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	101% 65-141%
2037-26-5	Toluene-D8	98% 65-129%
460-00-4	4-Bromofluorobenzene	94% 63-137%

12.1.1
12

Blank Spike Summary

Job Number: D70069
 Account: ALMS Accutest Mountain States
 Project: CONECOK: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSK2726-BS	K87413.D	1	05/01/15	JM	n/a	n/a	MSK2726

The QC reported here applies to the following samples:

Method: SW846 8260C

D70069-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2270	91	67-124
100-41-4	Ethylbenzene	2500	2600	104	75-120
108-88-3	Toluene	2500	2500	100	76-122
1330-20-7	Xylene (total)	7500	8060	107	78-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	65-141%
2037-26-5	Toluene-D8	107%	65-129%
460-00-4	4-Bromofluorobenzene	95%	63-137%

12.2.1
12

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D70069
 Account: ALMS Accutest Mountain States
 Project: CONECOK: Grizzly Pad Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D70069-1MS	K87422.D	1	05/01/15	JM	n/a	n/a	MSK2726
D70069-1MSD	K87423.D	1	05/01/15	JM	n/a	n/a	MSK2726
D70069-1	K87418.D	1	05/01/15	JM	n/a	n/a	MSK2726

The QC reported here applies to the following samples:

Method: SW846 8260C

D70069-1

CAS No.	Compound	D70069-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	6980	6070	87	6980	6230	89	3	34-139/30
100-41-4	Ethylbenzene	ND	6980	6990	100	6980	6860	98	2	24-146/30
108-88-3	Toluene	ND	6980	6700	96	6980	6610	95	1	30-147/30
1330-20-7	Xylene (total)	ND	20900	21500	103	20900	21400	102	0	25-147/30

CAS No.	Surrogate Recoveries	MS	MSD	D70069-1	Limits
1868-53-7	Dibromofluoromethane	93%	95%	102%	65-141%
2037-26-5	Toluene-D8	105%	107%	99%	65-129%
460-00-4	4-Bromofluorobenzene	95%	96%	93%	63-137%

* = Outside of Control Limits.