

State of Colorado  
**Oil and Gas Conservation Commission**



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

FOR OGCC USE ONLY  
REM 9153  
Received 9/10/2015  
Document 2315529

**SITE INVESTIGATION AND REMEDIATION WORKPLAN**

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

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

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

OGCC Employee:  
 Spill  Complaint  
 Inspection  NOAV  
Tracking No:

OGCC Operator Number: <u>10318</u>	Contact Name and Telephone: <u>Cameron Hunter</u>
Name of Operator: <u>Vaquero Energy Inc</u>	No: <u>805-245-1395</u>
Address: <u>4700 Stockdale Hwy Suite 120</u>	Fax: _____
City: <u>Bakersfield</u> State: <u>CA</u> Zip: <u>93309</u>	

API Number: <u>081-06750</u>	County: <u>Moffat</u>
Facility Name: <u>Blue Gravel</u>	Facility Number: <u>313027</u>
Well Name: <u>State 5-36</u>	Well Number: <u>State 5-36</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWSW/36/9N91</u>	Latitude: <u>40.690645</u> Longitude: <u>-107.559806</u>

**TECHNICAL CONDITIONS**

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

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

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Gas well pad

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

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

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>none</u>	<u>soil investigation (see attached letter report)</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

**REMEDIATION WORKPLAN**

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

Though Vaquero Energy was not aware of nor used the above referenced pit, we are attempting to change ownership of the site and therefore had been notified that the "pit" was never properly closed by former owners. The initial Form 27 was submitted to the COGCC on June 24, 2015 and approved by Kris Neidel on July 1, 2015.

Describe how source is to be removed:

The soil investigation and sampling event conducted by ARCADIS U.S., Inc. on July 13, 2015 on behalf of Vaquero shows that there is no impact to the soils within the extents of pit facility 112294. See attached letter report.

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.:

No remedial action is required at this time. Vaquero moves to have pit facility 112294 formally closed and the well location officially transferred to Mustang Resources, LLC. See attached letter report for additional details.



Tracking Number: Rem 9153  
Name of Operator: Vaquero Energy  
OGCC Operator No: 10318  
Received Date: 9/10/15  
Well Name & No: STATE 5-36  
Facility Name & No: 112294 (Pit) 313027 (Location)

Page 2  
**REMEDIATION WORKPLAN (Cont.)**

OGCC Employee:

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

Not applicable

**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.

Soil sampling and PID analysis were performed in the footprint of the former pit to determine the extent of soil contamination. Laboratory analytical results and field PID readings confirm there is no continuation within the extents of pit facility 112294 and satisfy the 900 Series Rules and 1004 Rules referenced in the delegated COGCC COAs. See attached letter report for additional details.

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

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

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

Not applicable

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: July 13, 2015 Date Site Investigation Completed: July 13, 2015 Date Remediation Plan Submitted: not applicable  
Remediation Start Date: not applicable Anticipated Completion Date: not applicable Actual Completion Date: \_\_\_\_\_

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

Print Name: Cameron Hunter Signed: [Signature]  
Title: Compliance Specialist Date: 09/10/2015

OGCC Approved: [Signature] Title: EPS II Date: 9/21/2015

Based on information provided. No further action is required. Should conditions at the site indicate continuation in soils exceed COGCC standards, further investigation may be required



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189 North Cedar Street  
Buffalo, Wyoming  
82834  
Tel 307 684 5891  
Fax 307 684 5961  
[www.arcadis-us.com](http://www.arcadis-us.com)

Cameron Hunter  
Compliance Specialist  
Mustang Resources LLC  
4700 Stockdale Hwy. Suite 120  
Bakersfield, CA 93309

ENVIRONMENT

Subject:

**July 2015 Sampling & Analysis Results from Vaquero Energy Pit Facility in Moffat County, Colorado State 5-36 Gas Well (API No. 081-06750, Facility ID 313027, Pit Facility 112294)**

Date:  
September 3, 2015

Dear Ms. Hunter:

ARCADIS U.S., Inc. (ARCADIS) is submitting this report on behalf of Mustang Resources LLC (Mustang) for the Vaquero Energy, Inc. (Vaquero) State 5-36 Gas Well (site [API No. 081-06750, Facility ID 223386, Pit Facility 112294]) located in Moffat County, Colorado. On June 2, 2015, Vaquero requested the Colorado Oil and Gas Conservation Commission (COGCC) to approve formal closure of pit facility 112294 and transfer of the subject facility from Vaquero to Mustang based on the following:

Contact:  
Randy Moses

Phone:  
307.684.5891

Email:  
[randolph.moses@arcadis-us.com](mailto:randolph.moses@arcadis-us.com)

- a) Vaquero has never formally used the State 5-36 pit 112294 to support its operations since acquiring the asset from Merrion in 2010; and
- b) Vaquero has researched its files and found no historical evidence of "pit closure" relating to the State 5-36 well.

Our ref:  
WY002685.0001

In a letter dated June 4, 2015, the COGCC denied the request and provided guidance to formally close the pit in accordance with the 900 Series Rules, which had not been completed by the former operator, and transfer the pit facility to Mustang. Subsequently, Vaquero submitted COGCC Form 27, Site Investigation and Remediation Work Plan, on June 24, 2015 via email. Kris Neidel (COGCC) approved the work plan on July 1, 2015 with the following Conditions of Approval (COAs):

- The vertical and horizontal extent of the pit should be determined through the soil investigation.
- Discrete samples (minimum of 3-5) should be taken from the pit wall; with at least one from the true pit bottom. Samples should be taken to adequately characterize any impact from pit. Guidance for sample locations should be taken from rule 910.b(3)B.
- Samples should be analyzed for table 910-1.
- Provide a schedule for start of work.

- Final reclamation should comply with 1004 rules.
- Operating should provide notice to Environmental staff Kris Neidel ([kris.neidel@state.co.us](mailto:kris.neidel@state.co.us)) or 970-871-1963 72hrs prior to mobilization at begin of work.
- COGCC should be notified immediately, in the event that ground water is encountered in investigation.
- Final report should include aerial photograph depicting exact location and vertical depth of samples as well as extent of pit.
- Work plan is approved; however additional information and remediation may be required during the course of the investigation and remediation.

This letter summarizes the results of the July soil investigation sampling event and provides updated justification to close pit facility 112294 and transfer the subject well to Mustang.

### Overview of Sample Analysis and Procedures

In adherence with the Form 27, Site Investigation and Remediation Work Plan, submitted to the COGCC on June 24, 2015, soil sampling was conducted at the site on July 13, 2015 by ARCADIS on behalf of Mustang. Soil borings were advanced in the pit center (BS-1) and on the southwestern wall (BS-2) using a Giddings drill rig. Two grab soil samples were collected from each of the 2 soil borings at depths of 11-12 feet (BS-1-1), 10-11 feet (BS-1-2), 7-8 feet (BS-2-1), and 9-10 feet (BS-2-2). Soils at the site were classified as primarily sandy clay with evidence of weathered bedrock and shale at deeper intervals. Field notes and boring logs are included as **Attachment 1**. COGCC inspector Kris Neidel was present during the soil investigation and approved the boring and sampling locations. Grab sample locations are depicted on **Figure 1**.

The four soil samples (BS-1-1, BS-1-2, BS-2-1, and BS-2-2) were shipped under standard chain of custody procedures to ESC Lab Sciences (ESC) in Mount Juliet, Tennessee. Original laboratory analytical reports are included as **Attachment 2**.

### Analytical Results

Analytical results for all site soil samples collected during the July 2015 sampling event were compared to the COGCC concentration levels provided in Table 910-1 of the 900 Series Rules relating to Exploration and Production (E&P) Waste Management, which have been used here as the applicable standard. Review of the laboratory analytical data and comparison of results against Table 910-1 standards indicate there is no impacts to soils or groundwater beneath the former pit facility 112294.

## Recommendations

Analytical results from the July 2015 sampling events indicate that there is no evidence of contamination beneath the former pit facility 112294 and satisfies the 900 Series Rules for treatment and handling of exploration and production waste. Additionally, the pit has been backfilled and restored as close to its original contour as practicable to satisfy the 1004 Rules.

Based on these investigation findings, ARCADIS recommends Mustang proceed with requesting formal closer of pit facility 112294 and transfer of facility ID 313027 to Mustang from the COGCC.

## Closing

ARCADIS anticipates that this letter report will satisfy the guidance and requests presented by the COGCC and will allow Vaquero and Mustang to obtain official transfer of the facility to Mustang.

If you have any questions or comments regarding this report, the attached analytical results, or the recommendations please do not hesitate to contact me at (720) 344-3888.

Sincerely,

ARCADIS U.S., Inc.



Randolph Moses, P.G.  
Project Geologist

Figure:

1. State 5-36 Pit Closure Soil Borings Sample Location Map

Attachments:

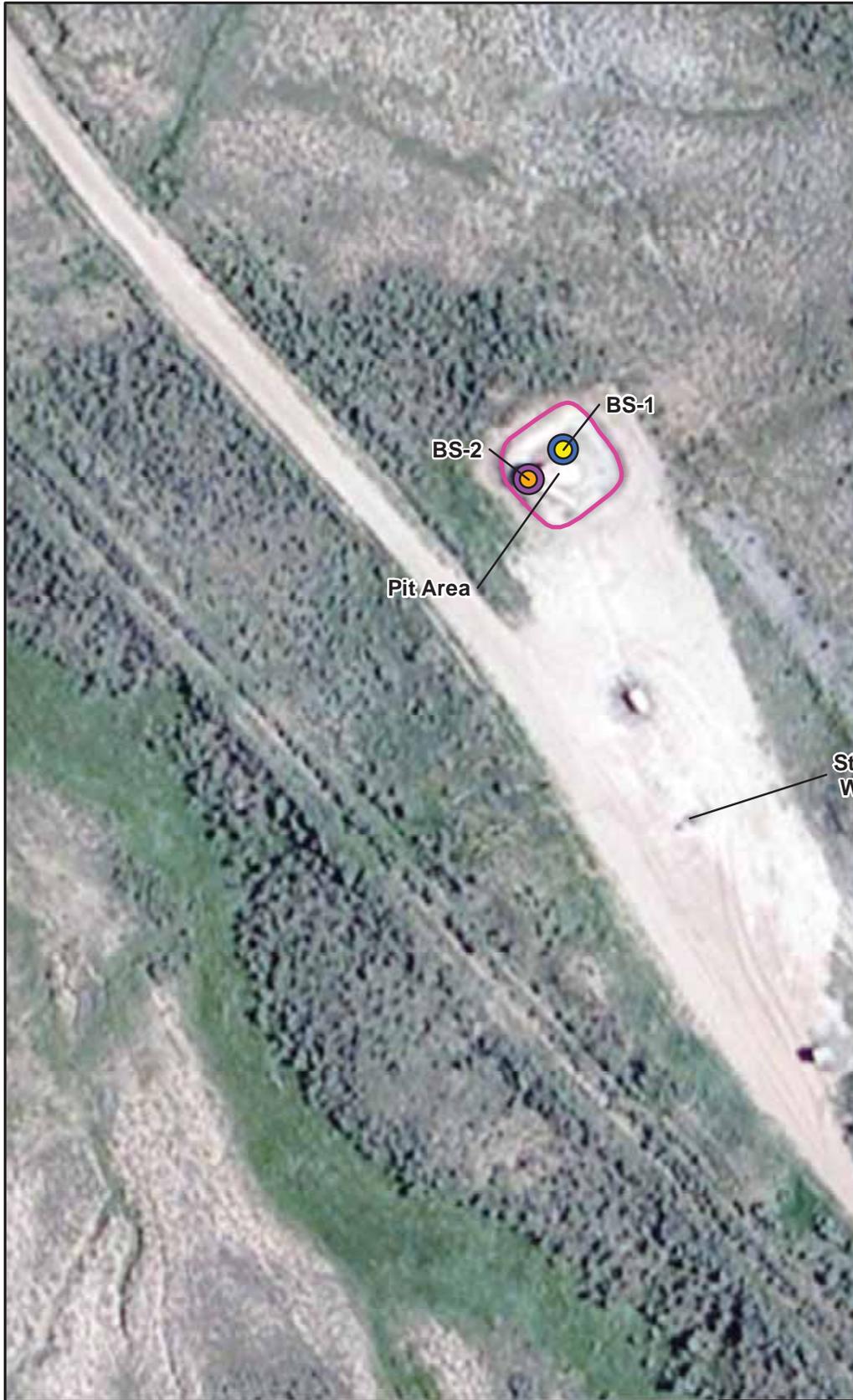
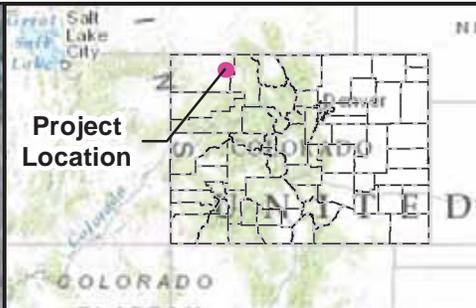
1. Field Notes and Boring Logs
2. Analytical Laboratory Report

Copies:

Ben Shoup, ARCADIS



**Figure**



**LEGEND**

-  7-8 ft bgs (BS-2-1)
-  10-11 ft bgs (BS-1-2)
-  9-10 ft bgs (BS-2-2)
-  11-12 ft bgs (BS-1-1)
-  Pit Area



MUSTANG RESOURCES LLC

**STATE 5-36  
PIT CLOSURE SOIL BORINGS  
SAMPLE LOCATION MAP**



FIGURE  
**1**



**Attachment 1**

**Field Notes and Boring Logs**

Mustang State 5-36

JOB NO: WY00765.0001

K.S. Moore

1

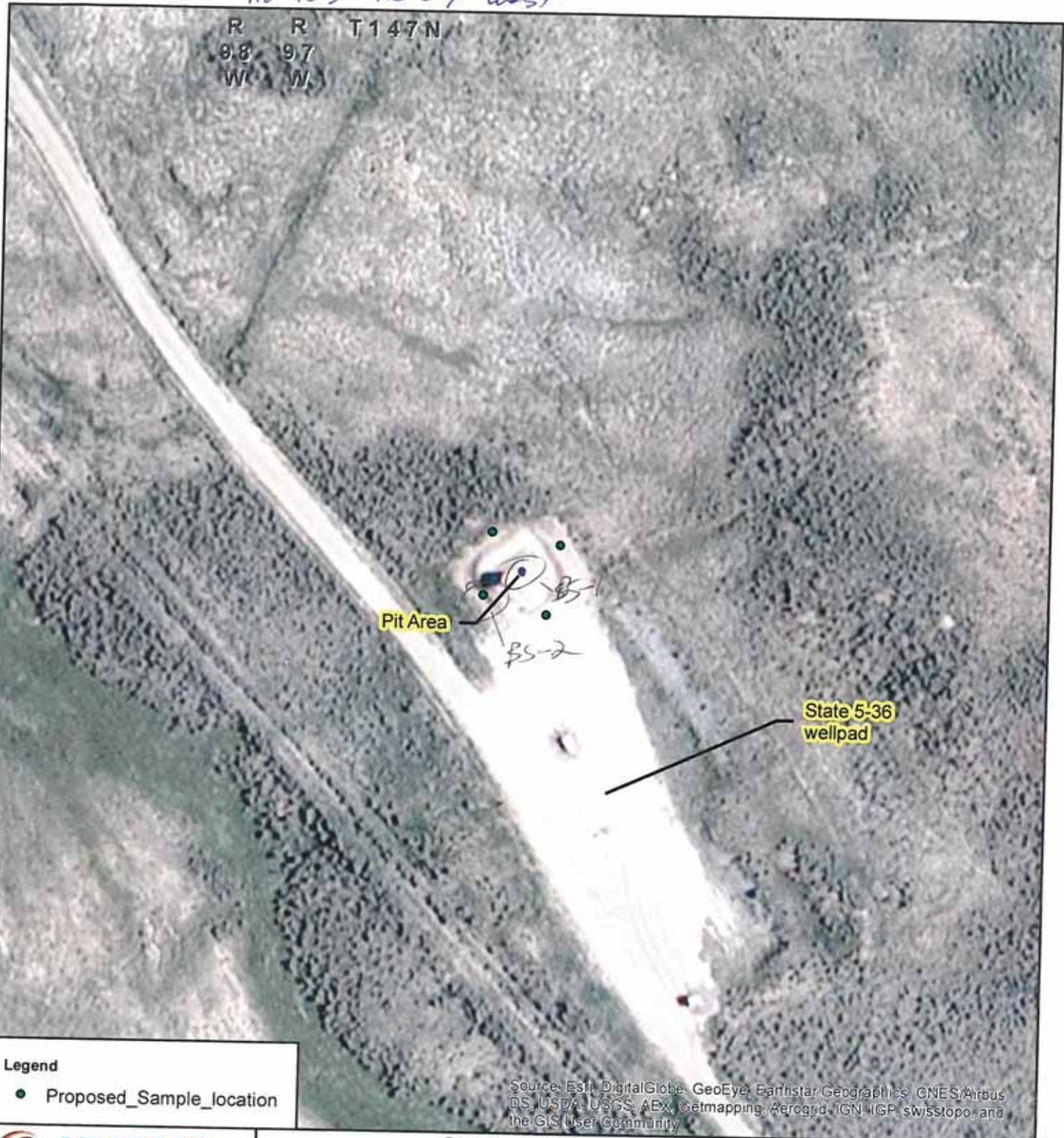
 970-620-5292 - Brandon (Mustang)  
 operator

- Departed Buffalo, WY at ~ 7:30 am Traveling to near Craig, CO
- Arrived onsite @ ~ 13:15. Set out table + sampling equipment, drilling tools, + photo documented site. Used Trimble GPS to install flagging for proposed borings. Five installed, one in center of old pit, the one on ~~the~~ each edge of old pit.
- waiting on Brandon (Mustang) to arrive and clear proposed borings.
- Chris Heidel (COGCC) arrived + discussed boring + sampling plan for pit.
- waiting on Brandon - called again. On his way
- Brandon has approved drill locations
- RU + drilling down on BS-1 "pit center". TD @ 11 ft  
 ↳ no indications of contaminants, rock pit liner. Everything looks good according to Chris.
- RDmo BS-1 ~~RDmo~~ RDmo on BS-2, push 4 ft, Chris request move toward center ~ 3 ft to get into pit wall.  
 ↳ RDmo; move 3 ft, RU in new BS-2
- drill down to 10 ft, no indications of contaminants
- RDmo BS-2, package samples, housekeeping + notes, pack up gear
- depart site @ 18:00. Drive to Craig, CO, stay in hotel
- return to Buffalo in AM

K.S. Moore

Rd 103 - RD 89 west

R R T 147 N  
88 97  
W W



Source: Esri, DigitalGlobe, GeoEye, Earthstar/Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

**Legend**

- Proposed\_Sample\_location



Infrastructure Water Environment Buildings  
189 North Cedar Street  
Buffalo, WY 82834

Phone # (307) 684-5891  
Fax # (307) 684-5961

Topo source:  
ESRI USA TOPO Basemap

UTM NAD83 Z13N



### State 5-36 Pit Closure Soil Borings Sample Location Map

Moffat County, Colorado

40.690494, -107.559671

Scale: 1:1,000



WY002685.0001

Date: 7/8/2015

Appendix:

# B

Sample ID: BS-1-1 Date: 7/13/15

Time: 16:10 Sampler: R.J. Moses

Contaminant: Food Fluids

Sample Type: Grab Composite Sample Depth: 11-12 FT

Potential for Ground water: Low / Med / High Est. Depth to Groundwater: 730 FT

Surface water Impact: Yes / No Sensitive Receptors: None

Visual Staining: Yes / No Odor: Yes / No

PID Reading: 250 ppm Conductivity: —

- Sample Description:
- Lt gray shale, bedrocks
  - two Jar

Client: Mudburg Project: State 5-36 Port Closure

Project #: WY002685.0001 County: Meeker State: CO

Location: state 5-36

QTR/QTR/T/R: \_\_\_\_\_ Coordinates: \_\_\_\_\_



Infrastructure Water Environment Buildings

Sample ID: BS1-2 Date: 07-13-15

Time: 16:10 Sampler: R. S. Williams

Contaminant: Prod. Fluids

Sample Type: Grab / Composite Sample Depth: 10-11 FT

Potential for Ground water: Low / Med / High Est. Depth to Groundwater: > 30 FT

Surface water Impact: Yes / No Sensitive Receptors: none

Visual Staining: Yes / No Odor: Yes / No

PID Reading: 114 ppm Conductivity: \_\_\_\_\_

Sample Description:

- weathered bedrock, 16 brown, flaky shale
- 1 hole bottom in suspected pit
- 2 jars, 1 Ziplock

Client: Mustang Project: State 5-36 pit closure

Project #: WY002685.0001 County: Maricopa State: CO

Location: State 5-36 pit closure

QTR/QTR/T/R: \_\_\_\_\_ Coordinates: \_\_\_\_\_



Infrastructure Water Environment Buildings

Sample ID: RS-2-1 Date: 7/13/15

Time: 17:00 Sampler: R.S. Myers

Contaminant: Pond Fluids

Sample Type:  Grab / Composite Sample Depth: 7-8 FT

Potential for Ground water:  Low / Med / High Est. Depth to Groundwater: > 30 FT

Surface water Impact: Yes  No Sensitive Receptors: none

Visual Staining: Yes  No Odor: Yes  No

PID Reading: 19 ppb Conductivity: \_\_\_\_\_

Sample Description:

brown, sandy, clay  
- 2 1/2 in Jaws, 2 feet

Client: Mustang Project: State 5-36 jct closure

Project #: WY002685.0001 County: Platte State: CO

Location: State 5-36

QTR/QTR/T/R: \_\_\_\_\_ Coordinates: \_\_\_\_\_



Infrastructure · Water · Environment · Buildings

Sample ID: PS-2-2 Date: 7/13/15

Time: 17:00 Sampler: R. S. Moses

Contaminant: food fluids

Sample Type: Grab / Composite Sample Depth: 9-10 ft logs

Potential for Ground water: Low / Med / High Est. Depth to Groundwater: > 30 ft

Surface water Impact: Yes  No  Sensitive Receptors: none

Visual Staining: Yes  No  Odor: Yes  No

PID Reading: 2.4 ppb Conductivity: — Soil Activity: —

**Sample Description:**

- 16 brown-grey <sup>quartz</sup> weathered bedrock.
- 2 4 oz Jars, 1 Ziplock

- no indications of hydro impacts

Client: Waste Project: Waste 5-36 pit closure

Project #: WY 00 2675.000 County: Moffat State: CO

Location: Waste 5-36 pit

QTR/QTR/T/R: — Coordinates: —



**Attachment 2**

**Analytical Laboratory Report**

## ARCADIS US - Buffalo, WY

Sample Delivery Group: L777281  
Samples Received: 07/16/2015  
Project Number: WY002685.0001  
Description: Mustang - State 5-36 Pit  
Site: STATE 5-36  
Report To: Randy Moses  
189 North Cedar Street  
Buffalo, WY 82834

Entire Report Reviewed By:



Jarred Willis  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b><sup>1</sup>Cp: Cover Page</b>	<b>1</b>
<b><sup>2</sup>Tc: Table of Contents</b>	<b>2</b>
<b><sup>3</sup>Ss: Sample Summary</b>	<b>3</b>
<b><sup>4</sup>Cn: Case Narrative</b>	<b>5</b>
<b><sup>5</sup>Sr: Sample Results</b>	<b>6</b>
BS-1-1 11-12FT L777281-01	6
BS-1-1 11-12FT L777281-02	7
BS-1-2 10-11FT L777281-03	9
BS-1-2 10-11FT L777281-04	10
BS-2-1 7-8FT L777281-05	12
BS-2-1 7-8FT L777281-06	13
BS-2-2 9-10FT L777281-07	15
BS-2-2 9-10FT L777281-08	16
<b><sup>6</sup>Qc: Quality Control Summary</b>	<b>18</b>
Wet Chemistry by Method 9045D	18
Wet Chemistry by Method 9050AMod	19
Mercury by Method 7470A	20
Metals (ICP) by Method 6010B	21
Volatile Organic Compounds (GC) by Method 8021/8015	22
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	24
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	25
<b><sup>7</sup>Gl: Glossary of Terms</b>	<b>31</b>
<b><sup>8</sup>Al: Accreditations &amp; Locations</b>	<b>32</b>
<b><sup>9</sup>Sc: Chain of Custody</b>	<b>33</b>

<sup>1</sup> Cp
<sup>2</sup> Tc
<sup>3</sup> Ss
<sup>4</sup> Cn
<sup>5</sup> Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> Al
<sup>9</sup> Sc

# SAMPLE SUMMARY



## BS-1-1 11-12FT L777281-01 Waste

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG803512	1	07/19/15 19:52	07/20/15 17:00	MPT
Metals (ICP) by Method 6010B	WG803725	1	07/21/15 00:57	07/21/15 17:13	ST
Preparation by Method 1311	WG803148	1	07/18/15 07:54	07/18/15 17:55	BG
Wet Chemistry by Method 9045D	WG803095	1	07/18/15 10:16	07/18/15 10:16	CM

Collected by R.J. Moses  
 Collected date/time 07/13/15 16:10  
 Received date/time 07/16/15 09:00

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

## BS-1-1 11-12FT L777281-02 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Calculated Results	WG803104	1	07/17/15 13:37	07/21/15 07:18	ST
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG802927	1	07/16/15 17:47	07/17/15 07:32	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG803438	1	07/18/15 18:18	07/19/15 11:56	CLG
Volatile Organic Compounds (GC) by Method 8021/8015	WG803539	5	07/20/15 08:23	07/20/15 18:26	MCB
Wet Chemistry by Method 9050AMod	WG803929	1	07/22/15 13:30	07/22/15 13:30	JER

Collected by R.J. Moses  
 Collected date/time 07/13/15 16:10  
 Received date/time 07/16/15 09:00

## BS-1-2 10-11FT L777281-03 Waste

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG803512	1	07/19/15 19:52	07/20/15 17:02	MPT
Metals (ICP) by Method 6010B	WG803725	1	07/21/15 00:57	07/21/15 17:18	ST
Preparation by Method 1311	WG803148	1	07/18/15 07:54	07/18/15 17:55	BG
Wet Chemistry by Method 9045D	WG803095	1	07/18/15 10:16	07/18/15 10:16	CM

Collected by R.J. Moses  
 Collected date/time 07/13/15 16:10  
 Received date/time 07/16/15 09:00

## BS-1-2 10-11FT L777281-04 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Calculated Results	WG803104	1	07/17/15 13:37	07/21/15 07:18	ST
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG802927	1	07/16/15 17:47	07/17/15 07:55	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG803438	1	07/18/15 18:18	07/19/15 12:06	CLG
Volatile Organic Compounds (GC) by Method 8021/8015	WG803539	5	07/20/15 08:23	07/21/15 02:16	MCB
Wet Chemistry by Method 9050AMod	WG803929	1	07/22/15 13:30	07/22/15 13:30	JER

Collected by R.J. Moses  
 Collected date/time 07/13/15 16:10  
 Received date/time 07/16/15 09:00

## BS-2-1 7-8FT L777281-05 Waste

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG803512	1	07/19/15 19:52	07/20/15 17:04	MPT
Metals (ICP) by Method 6010B	WG803725	1	07/21/15 00:57	07/21/15 17:23	ST
Preparation by Method 1311	WG803148	1	07/18/15 07:54	07/18/15 17:55	BG
Wet Chemistry by Method 9045D	WG803095	1	07/18/15 10:16	07/18/15 10:16	CM

Collected by R.J. Moses  
 Collected date/time 07/13/15 17:00  
 Received date/time 07/16/15 09:00

## BS-2-1 7-8FT L777281-06 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Calculated Results	WG803104	1	07/17/15 13:37	07/21/15 07:18	ST
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG802927	1	07/16/15 17:47	07/17/15 10:39	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG803438	1	07/18/15 18:18	07/19/15 12:15	CLG
Volatile Organic Compounds (GC) by Method 8021/8015	WG803539	5	07/20/15 08:23	07/21/15 02:38	MCB

Collected by R.J. Moses  
 Collected date/time 07/13/15 17:00  
 Received date/time 07/16/15 09:00

# SAMPLE SUMMARY

## BS-2-1 7-8FT L777281-06 Solid

Collected by  
R.J. Moses      Collected date/time  
07/13/15 17:00      Received date/time  
07/16/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 9050AMod	WG803929	1	07/22/15 13:30	07/22/15 13:30	JER

1  
Cp

2  
Tc

3  
Ss

## BS-2-2 9-10FT L777281-07 Waste

Collected by  
R.J. Moses      Collected date/time  
07/13/15 17:00      Received date/time  
07/16/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG803512	1	07/19/15 19:52	07/20/15 17:11	MPT
Metals (ICP) by Method 6010B	WG803725	1	07/21/15 00:57	07/21/15 17:28	ST
Preparation by Method 1311	WG803148	1	07/18/15 07:54	07/18/15 17:55	BG
Wet Chemistry by Method 9045D	WG803095	1	07/18/15 10:16	07/18/15 10:16	CM

4  
Cn

5  
Sr

6  
Qc

## BS-2-2 9-10FT L777281-08 Solid

Collected by  
R.J. Moses      Collected date/time  
07/13/15 17:00      Received date/time  
07/16/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Calculated Results	WG803104	1	07/17/15 13:37	07/21/15 09:48	CCE
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG802927	1	07/16/15 17:47	07/17/15 08:19	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG803438	1	07/18/15 18:18	07/19/15 12:25	CLG
Volatile Organic Compounds (GC) by Method 8021/8015	WG803539	5	07/20/15 08:23	07/21/15 02:59	MCB
Wet Chemistry by Method 9050AMod	WG803929	1	07/22/15 13:30	07/22/15 13:30	JER

7  
Gl

8  
Al

9  
Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jarred Willis  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		7/18/2015 7:54:00 AM	WG803148

1 Cp

2 Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.20		1	07/18/2015 10:16	<a href="#">WG803095</a>

3 Ss

4 Cn

Sample Narrative:

9045D L777281-01 WG803095: 8.20 at 21.9c

5 Sr

6 Qc

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	07/20/2015 17:00	<a href="#">WG803512</a>

7 Gl

8 Al

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.450	5	1	07/21/2015 17:13	<a href="#">WG803725</a>
Barium	ND		1.40	100	1	07/21/2015 17:13	<a href="#">WG803725</a>
Cadmium	ND		0.450	1	1	07/21/2015 17:13	<a href="#">WG803725</a>
Chromium	ND		0.450	5	1	07/21/2015 17:13	<a href="#">WG803725</a>
Lead	ND		0.450	5	1	07/21/2015 17:13	<a href="#">WG803725</a>
Selenium	ND		0.450	1	1	07/21/2015 17:13	<a href="#">WG803725</a>
Silver	ND		0.450	5	1	07/21/2015 17:13	<a href="#">WG803725</a>

9 Sc



## Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.46			1	07/21/2015 07:18	WG803104

## Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	957		1	07/22/2015 13:30	<a href="#">WG803929</a>

## Volatile Organic Compounds (GC) by Method 8021/8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.00250	5	07/20/2015 18:26	<a href="#">WG803539</a>
Toluene	ND		0.0250	5	07/20/2015 18:26	<a href="#">WG803539</a>
Ethylbenzene	ND		0.00250	5	07/20/2015 18:26	<a href="#">WG803539</a>
Total Xylene	ND		0.00750	5	07/20/2015 18:26	<a href="#">WG803539</a>
TPH (GC/FID) Low Fraction	ND		0.500	5	07/20/2015 18:26	<a href="#">WG803539</a>
(S) a,a,a-Trifluorotoluene(FID)	107		59.0-128		07/20/2015 18:26	<a href="#">WG803539</a>
(S) a,a,a-Trifluorotoluene(PID)	98.3		54.0-144		07/20/2015 18:26	<a href="#">WG803539</a>

## Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	07/19/2015 11:56	<a href="#">WG803438</a>
(S) o-Terphenyl	84.1		50.0-150		07/19/2015 11:56	<a href="#">WG803438</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Acenaphthylene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Anthracene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Benzdine	ND	<u>J3</u>	0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Benzo(a)anthracene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Benzo(b)fluoranthene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Benzo(k)fluoranthene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Benzo(g,h,i)perylene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Benzo(a)pyrene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Bis(2-chlorethoxy)methane	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Bis(2-chloroethyl)ether	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Bis(2-chloroisopropyl)ether	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
4-Bromophenyl-phenylether	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
2-Chloronaphthalene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
4-Chlorophenyl-phenylether	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Chrysene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Dibenz(a,h)anthracene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
3,3-Dichlorobenzidine	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
2,4-Dinitrotoluene	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
2,6-Dinitrotoluene	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Fluoranthene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Fluorene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Hexachlorobenzene	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Hexachloro-1,3-butadiene	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Hexachlorocyclopentadiene	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Hexachloroethane	ND		0.330	1	07/17/2015 07:32	<a href="#">WG802927</a>
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	07/17/2015 07:32	<a href="#">WG802927</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Isophorone	ND		0.330	1	07/17/2015 07:32	WG802927
Naphthalene	ND		0.0330	1	07/17/2015 07:32	WG802927
Nitrobenzene	ND		0.330	1	07/17/2015 07:32	WG802927
n-Nitrosodimethylamine	ND		0.330	1	07/17/2015 07:32	WG802927
n-Nitrosodiphenylamine	ND		0.330	1	07/17/2015 07:32	WG802927
n-Nitrosodi-n-propylamine	ND		0.330	1	07/17/2015 07:32	WG802927
Phenanthrene	ND		0.0330	1	07/17/2015 07:32	WG802927
Benzylbutyl phthalate	ND		0.330	1	07/17/2015 07:32	WG802927
Bis(2-ethylhexyl)phthalate	ND		0.330	1	07/17/2015 07:32	WG802927
Di-n-butyl phthalate	ND		0.330	1	07/17/2015 07:32	WG802927
Diethyl phthalate	ND		0.330	1	07/17/2015 07:32	WG802927
Dimethyl phthalate	ND		0.330	1	07/17/2015 07:32	WG802927
Di-n-octyl phthalate	ND		0.330	1	07/17/2015 07:32	WG802927
Pyrene	ND		0.0330	1	07/17/2015 07:32	WG802927
1,2,4-Trichlorobenzene	ND		0.330	1	07/17/2015 07:32	WG802927
4-Chloro-3-methylphenol	ND		0.330	1	07/17/2015 07:32	WG802927
2-Chlorophenol	ND		0.330	1	07/17/2015 07:32	WG802927
2,4-Dichlorophenol	ND		0.330	1	07/17/2015 07:32	WG802927
2,4-Dimethylphenol	ND		0.330	1	07/17/2015 07:32	WG802927
4,6-Dinitro-2-methylphenol	ND		0.330	1	07/17/2015 07:32	WG802927
2,4-Dinitrophenol	ND		0.330	1	07/17/2015 07:32	WG802927
2-Nitrophenol	ND		0.330	1	07/17/2015 07:32	WG802927
4-Nitrophenol	ND		0.330	1	07/17/2015 07:32	WG802927
Pentachlorophenol	ND		0.330	1	07/17/2015 07:32	WG802927
Phenol	ND		0.330	1	07/17/2015 07:32	WG802927
2,4,6-Trichlorophenol	ND		0.330	1	07/17/2015 07:32	WG802927
(S) 2-Fluorophenol	67.6		21.1-116		07/17/2015 07:32	WG802927
(S) Phenol-d5	63.9		26.3-121		07/17/2015 07:32	WG802927
(S) Nitrobenzene-d5	68.9		21.9-129		07/17/2015 07:32	WG802927
(S) 2-Fluorobiphenyl	76.4		34.9-129		07/17/2015 07:32	WG802927
(S) 2,4,6-Tribromophenol	70.2		21.6-142		07/17/2015 07:32	WG802927
(S) p-Terphenyl-d14	69.2		21.5-128		07/17/2015 07:32	WG802927

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		7/18/2015 7:54:00 AM	WG803148

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81		1	07/18/2015 10:16	<a href="#">WG803095</a>

Sample Narrative:

9045D L777281-03 WG803095: 8.81 at 21.7c

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	07/20/2015 17:02	<a href="#">WG803512</a>

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.450	5	1	07/21/2015 17:18	<a href="#">WG803725</a>
Barium	ND		1.40	100	1	07/21/2015 17:18	<a href="#">WG803725</a>
Cadmium	ND		0.450	1	1	07/21/2015 17:18	<a href="#">WG803725</a>
Chromium	ND		0.450	5	1	07/21/2015 17:18	<a href="#">WG803725</a>
Lead	ND		0.450	5	1	07/21/2015 17:18	<a href="#">WG803725</a>
Selenium	ND		0.450	1	1	07/21/2015 17:18	<a href="#">WG803725</a>
Silver	ND		0.450	5	1	07/21/2015 17:18	<a href="#">WG803725</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.61			1	07/21/2015 07:18	WG803104

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	598		1	07/22/2015 13:30	<a href="#">WG803929</a>

## Volatile Organic Compounds (GC) by Method 8021/8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00250	5	07/21/2015 02:16	<a href="#">WG803539</a>
Toluene	ND		0.0250	5	07/21/2015 02:16	<a href="#">WG803539</a>
Ethylbenzene	ND		0.00250	5	07/21/2015 02:16	<a href="#">WG803539</a>
Total Xylene	ND		0.00750	5	07/21/2015 02:16	<a href="#">WG803539</a>
TPH (GC/FID) Low Fraction	ND		0.500	5	07/21/2015 02:16	<a href="#">WG803539</a>
(S) a,a,a-Trifluorotoluene(FID)	106		59.0-128		07/21/2015 02:16	<a href="#">WG803539</a>
(S) a,a,a-Trifluorotoluene(PID)	98.0		54.0-144		07/21/2015 02:16	<a href="#">WG803539</a>

## Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	07/19/2015 12:06	<a href="#">WG803438</a>
(S) o-Terphenyl	66.9		50.0-150		07/19/2015 12:06	<a href="#">WG803438</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Acenaphthylene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Anthracene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Benzdine	ND	<u>J3</u>	0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Benzo(a)anthracene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Benzo(b)fluoranthene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Benzo(k)fluoranthene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Benzo(g,h,i)perylene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Benzo(a)pyrene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Bis(2-chlorethoxy)methane	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Bis(2-chloroethyl)ether	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Bis(2-chloroisopropyl)ether	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
4-Bromophenyl-phenylether	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
2-Chloronaphthalene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
4-Chlorophenyl-phenylether	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Chrysene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Dibenz(a,h)anthracene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
3,3-Dichlorobenzidine	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
2,4-Dinitrotoluene	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
2,6-Dinitrotoluene	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Fluoranthene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Fluorene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Hexachlorobenzene	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Hexachloro-1,3-butadiene	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Hexachlorocyclopentadiene	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Hexachloroethane	ND		0.330	1	07/17/2015 07:55	<a href="#">WG802927</a>
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	07/17/2015 07:55	<a href="#">WG802927</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Isophorone	ND		0.330	1	07/17/2015 07:55	WG802927
Naphthalene	ND		0.0330	1	07/17/2015 07:55	WG802927
Nitrobenzene	ND		0.330	1	07/17/2015 07:55	WG802927
n-Nitrosodimethylamine	ND		0.330	1	07/17/2015 07:55	WG802927
n-Nitrosodiphenylamine	ND		0.330	1	07/17/2015 07:55	WG802927
n-Nitrosodi-n-propylamine	ND		0.330	1	07/17/2015 07:55	WG802927
Phenanthrene	ND		0.0330	1	07/17/2015 07:55	WG802927
Benzylbutyl phthalate	ND		0.330	1	07/17/2015 07:55	WG802927
Bis(2-ethylhexyl)phthalate	ND		0.330	1	07/17/2015 07:55	WG802927
Di-n-butyl phthalate	ND		0.330	1	07/17/2015 07:55	WG802927
Diethyl phthalate	ND		0.330	1	07/17/2015 07:55	WG802927
Dimethyl phthalate	ND		0.330	1	07/17/2015 07:55	WG802927
Di-n-octyl phthalate	ND		0.330	1	07/17/2015 07:55	WG802927
Pyrene	ND		0.0330	1	07/17/2015 07:55	WG802927
1,2,4-Trichlorobenzene	ND		0.330	1	07/17/2015 07:55	WG802927
4-Chloro-3-methylphenol	ND		0.330	1	07/17/2015 07:55	WG802927
2-Chlorophenol	ND		0.330	1	07/17/2015 07:55	WG802927
2,4-Dichlorophenol	ND		0.330	1	07/17/2015 07:55	WG802927
2,4-Dimethylphenol	ND		0.330	1	07/17/2015 07:55	WG802927
4,6-Dinitro-2-methylphenol	ND		0.330	1	07/17/2015 07:55	WG802927
2,4-Dinitrophenol	ND		0.330	1	07/17/2015 07:55	WG802927
2-Nitrophenol	ND		0.330	1	07/17/2015 07:55	WG802927
4-Nitrophenol	ND		0.330	1	07/17/2015 07:55	WG802927
Pentachlorophenol	ND		0.330	1	07/17/2015 07:55	WG802927
Phenol	ND		0.330	1	07/17/2015 07:55	WG802927
2,4,6-Trichlorophenol	ND		0.330	1	07/17/2015 07:55	WG802927
(S) 2-Fluorophenol	73.5		21.1-116		07/17/2015 07:55	WG802927
(S) Phenol-d5	70.0		26.3-121		07/17/2015 07:55	WG802927
(S) Nitrobenzene-d5	71.1		21.9-129		07/17/2015 07:55	WG802927
(S) 2-Fluorobiphenyl	71.6		34.9-129		07/17/2015 07:55	WG802927
(S) 2,4,6-Tribromophenol	70.7		21.6-142		07/17/2015 07:55	WG802927
(S) p-Terphenyl-d14	57.0		21.5-128		07/17/2015 07:55	WG802927

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		7/18/2015 7:54:00 AM	WG803148

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.21		1	07/18/2015 10:16	<a href="#">WG803095</a>

Sample Narrative:

9045D L777281-05 WG803095: 8.21 at 21.6c

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	07/20/2015 17:04	<a href="#">WG803512</a>

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.450	5	1	07/21/2015 17:23	<a href="#">WG803725</a>
Barium	ND		1.40	100	1	07/21/2015 17:23	<a href="#">WG803725</a>
Cadmium	ND		0.450	1	1	07/21/2015 17:23	<a href="#">WG803725</a>
Chromium	ND		0.450	5	1	07/21/2015 17:23	<a href="#">WG803725</a>
Lead	ND		0.450	5	1	07/21/2015 17:23	<a href="#">WG803725</a>
Selenium	ND		0.450	1	1	07/21/2015 17:23	<a href="#">WG803725</a>
Silver	ND		0.450	5	1	07/21/2015 17:23	<a href="#">WG803725</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.93			1	07/21/2015 07:18	WG803104

## Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	855		1	07/22/2015 13:30	<a href="#">WG803929</a>

## Volatile Organic Compounds (GC) by Method 8021/8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.00250	5	07/21/2015 02:38	<a href="#">WG803539</a>
Toluene	ND		0.0250	5	07/21/2015 02:38	<a href="#">WG803539</a>
Ethylbenzene	ND		0.00250	5	07/21/2015 02:38	<a href="#">WG803539</a>
Total Xylene	ND		0.00750	5	07/21/2015 02:38	<a href="#">WG803539</a>
TPH (GC/FID) Low Fraction	ND		0.500	5	07/21/2015 02:38	<a href="#">WG803539</a>
(S) a,a,a-Trifluorotoluene(FID)	107		59.0-128		07/21/2015 02:38	<a href="#">WG803539</a>
(S) a,a,a-Trifluorotoluene(PID)	98.3		54.0-144		07/21/2015 02:38	<a href="#">WG803539</a>

## Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	07/19/2015 12:15	<a href="#">WG803438</a>
(S) o-Terphenyl	66.6		50.0-150		07/19/2015 12:15	<a href="#">WG803438</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Acenaphthylene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Anthracene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Benzidine	ND	<u>J3</u>	0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Benzo(a)anthracene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Benzo(b)fluoranthene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Benzo(k)fluoranthene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Benzo(g,h,i)perylene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Benzo(a)pyrene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Bis(2-chlorethoxy)methane	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Bis(2-chloroethyl)ether	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Bis(2-chloroisopropyl)ether	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
4-Bromophenyl-phenylether	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2-Chloronaphthalene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
4-Chlorophenyl-phenylether	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Chrysene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Dibenz(a,h)anthracene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
3,3-Dichlorobenzidine	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2,4-Dinitrotoluene	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2,6-Dinitrotoluene	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Fluoranthene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Fluorene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Hexachlorobenzene	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Hexachloro-1,3-butadiene	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Hexachlorocyclopentadiene	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Hexachloroethane	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Isophorone	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Naphthalene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Nitrobenzene	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
n-Nitrosodimethylamine	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
n-Nitrosodiphenylamine	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
n-Nitrosodi-n-propylamine	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Phenanthrene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Benzylbutyl phthalate	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Bis(2-ethylhexyl)phthalate	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Di-n-butyl phthalate	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Diethyl phthalate	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Dimethyl phthalate	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Di-n-octyl phthalate	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Pyrene	ND		0.0330	1	07/17/2015 10:39	<a href="#">WG802927</a>
1,2,4-Trichlorobenzene	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
4-Chloro-3-methylphenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2-Chlorophenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2,4-Dichlorophenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2,4-Dimethylphenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
4,6-Dinitro-2-methylphenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2,4-Dinitrophenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2-Nitrophenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
4-Nitrophenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Pentachlorophenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
Phenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
2,4,6-Trichlorophenol	ND		0.330	1	07/17/2015 10:39	<a href="#">WG802927</a>
(S) 2-Fluorophenol	72.5		21.1-116		07/17/2015 10:39	<a href="#">WG802927</a>
(S) Phenol-d5	69.1		26.3-121		07/17/2015 10:39	<a href="#">WG802927</a>
(S) Nitrobenzene-d5	67.3		21.9-129		07/17/2015 10:39	<a href="#">WG802927</a>
(S) 2-Fluorobiphenyl	73.4		34.9-129		07/17/2015 10:39	<a href="#">WG802927</a>
(S) 2,4,6-Tribromophenol	71.4		21.6-142		07/17/2015 10:39	<a href="#">WG802927</a>
(S) p-Terphenyl-d14	59.0		21.5-128		07/17/2015 10:39	<a href="#">WG802927</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		7/18/2015 7:54:00 AM	WG803148

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.42		1	07/18/2015 10:16	<a href="#">WG803095</a>

Sample Narrative:

9045D L777281-07 WG803095: 8.42 at 21.7c

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	07/20/2015 17:11	<a href="#">WG803512</a>

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.450	5	1	07/21/2015 17:28	<a href="#">WG803725</a>
Barium	ND		1.40	100	1	07/21/2015 17:28	<a href="#">WG803725</a>
Cadmium	ND		0.450	1	1	07/21/2015 17:28	<a href="#">WG803725</a>
Chromium	ND		0.450	5	1	07/21/2015 17:28	<a href="#">WG803725</a>
Lead	ND		0.450	5	1	07/21/2015 17:28	<a href="#">WG803725</a>
Selenium	ND		0.450	1	1	07/21/2015 17:28	<a href="#">WG803725</a>
Silver	ND		0.450	5	1	07/21/2015 17:28	<a href="#">WG803725</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	10.5			1	07/21/2015 09:48	WG803104

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	669		1	07/22/2015 13:30	<a href="#">WG803929</a>

## Volatile Organic Compounds (GC) by Method 8021/8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00250	5	07/21/2015 02:59	<a href="#">WG803539</a>
Toluene	ND		0.0250	5	07/21/2015 02:59	<a href="#">WG803539</a>
Ethylbenzene	ND		0.00250	5	07/21/2015 02:59	<a href="#">WG803539</a>
Total Xylene	ND		0.00750	5	07/21/2015 02:59	<a href="#">WG803539</a>
TPH (GC/FID) Low Fraction	ND		0.500	5	07/21/2015 02:59	<a href="#">WG803539</a>
(S) a,a,a-Trifluorotoluene(FID)	107		59.0-128		07/21/2015 02:59	<a href="#">WG803539</a>
(S) a,a,a-Trifluorotoluene(PID)	98.8		54.0-144		07/21/2015 02:59	<a href="#">WG803539</a>

## Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	07/19/2015 12:25	<a href="#">WG803438</a>
(S) o-Terphenyl	66.3		50.0-150		07/19/2015 12:25	<a href="#">WG803438</a>

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Acenaphthylene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Anthracene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Benzdine	ND	<u>J3</u>	0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Benzo(a)anthracene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Benzo(b)fluoranthene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Benzo(k)fluoranthene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Benzo(g,h,i)perylene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Benzo(a)pyrene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Bis(2-chlorethoxy)methane	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Bis(2-chloroethyl)ether	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Bis(2-chloroisopropyl)ether	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
4-Bromophenyl-phenylether	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2-Chloronaphthalene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
4-Chlorophenyl-phenylether	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Chrysene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Dibenz(a,h)anthracene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
3,3-Dichlorobenzidine	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2,4-Dinitrotoluene	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2,6-Dinitrotoluene	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Fluoranthene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Fluorene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Hexachlorobenzene	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Hexachloro-1,3-butadiene	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Hexachlorocyclopentadiene	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Hexachloroethane	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 07/13/15 17:00

L777281

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Isophorone	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Naphthalene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Nitrobenzene	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
n-Nitrosodimethylamine	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
n-Nitrosodiphenylamine	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
n-Nitrosodi-n-propylamine	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Phenanthrene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Benzylbutyl phthalate	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Bis(2-ethylhexyl)phthalate	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Di-n-butyl phthalate	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Diethyl phthalate	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Dimethyl phthalate	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Di-n-octyl phthalate	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Pyrene	ND		0.0330	1	07/17/2015 08:19	<a href="#">WG802927</a>
1,2,4-Trichlorobenzene	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
4-Chloro-3-methylphenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2-Chlorophenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2,4-Dichlorophenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2,4-Dimethylphenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
4,6-Dinitro-2-methylphenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2,4-Dinitrophenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2-Nitrophenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
4-Nitrophenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Pentachlorophenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
Phenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
2,4,6-Trichlorophenol	ND		0.330	1	07/17/2015 08:19	<a href="#">WG802927</a>
(S) 2-Fluorophenol	69.1		21.1-116		07/17/2015 08:19	<a href="#">WG802927</a>
(S) Phenol-d5	68.3		26.3-121		07/17/2015 08:19	<a href="#">WG802927</a>
(S) Nitrobenzene-d5	72.7		21.9-129		07/17/2015 08:19	<a href="#">WG802927</a>
(S) 2-Fluorobiphenyl	73.7		34.9-129		07/17/2015 08:19	<a href="#">WG802927</a>
(S) 2,4,6-Tribromophenol	69.0		21.6-142		07/17/2015 08:19	<a href="#">WG802927</a>
(S) p-Terphenyl-d14	59.9		21.5-128		07/17/2015 08:19	<a href="#">WG802927</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



L777192-05 Original Sample (OS) • Duplicate (DUP)

(OS) 07/18/15 10:16 • (DUP) 07/18/15 10:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
pH	8.3	8.3	1	0.60	1	

1 Cp

2 Tc

3 Ss

L777449-01 Original Sample (OS) • Duplicate (DUP)

(OS) 07/18/15 10:16 • (DUP) 07/18/15 10:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
pH	7.0	7.0	1	0.57	1	

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/18/15 10:16 • (LCSD) 07/18/15 10:16

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
pH	5.63	5.56	5.58	98.8	99.1	98.2-102			0.359	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 07/22/15 13:30

Analyte	MB Result umhos/cm	MB Qualifier	MB RDL umhos/cm
Specific Conductance	1.04		

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L777271-02 Original Sample (OS) • Duplicate (DUP)

(OS) 07/22/15 13:30 • (DUP) 07/22/15 13:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	7000	6900	1	1.0		20

L777696-15 Original Sample (OS) • Duplicate (DUP)

(OS) 07/22/15 13:30 • (DUP) 07/22/15 13:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	360	350	1	2.8		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/22/15 13:30 • (LCSD) 07/22/15 13:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Specific Conductance	873	894	898	102	103	90.0-110			0.446	20



Method Blank (MB)

(MB) 07/20/15 16:17

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Mercury	ND		0.0100

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/20/15 16:20 • (LCSD) 07/20/15 16:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	0.0295	0.0298	98	99	80-120			1	20

L777090-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 07/20/15 16:24 • (MS) 07/20/15 16:26 • (MSD) 07/20/15 16:28

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	0.000166	0.0303	0.0285	101	95	1	75-125			6	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 07/21/15 16:21

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Arsenic	ND		0.450
Barium	ND		1.35
Cadmium	ND		0.450
Chromium	ND		0.450
Lead	ND		0.450
Selenium	ND		0.450
Silver	ND		0.450

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/21/15 16:26 • (LCSD) 07/21/15 16:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	9.05	9.17	101	102	80-120			1	20
Barium	9.00	9.16	9.32	102	104	80-120			2	20
Cadmium	9.00	9.29	9.46	103	105	80-120			2	20
Chromium	9.00	9.23	9.27	103	103	80-120			0	20
Lead	9.00	9.51	9.67	106	107	80-120			2	20
Selenium	9.00	9.61	9.77	107	109	80-120			2	20
Silver	9.00	9.27	9.40	103	104	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L777222-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 07/21/15 16:35 • (MS) 07/21/15 16:54 • (MSD) 07/21/15 16:58

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	0.0187	9.29	9.73	103	108	1	75-125			5	20
Barium	9.00	0.351	9.22	9.58	99	103	1	75-125			4	20
Cadmium	9.00	0.00889	9.48	9.87	105	110	1	75-125			4	20
Chromium	9.00	0.00506	9.02	9.35	100	104	1	75-125			4	20
Lead	9.00	0.00804	9.38	9.79	104	109	1	75-125			4	20
Selenium	9.00	0.0384	10.1	10.5	112	116	1	75-125			4	20
Silver	9.00	0.00158	9.63	10.0	107	111	1	75-125			4	20



Method Blank (MB)

(MB) 07/20/15 18:03

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Benzene	ND		0.000500
Toluene	ND		0.00500
Ethylbenzene	ND		0.000500
Total Xylene	ND		0.00150
TPH (GC/FID) Low Fraction	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	108		59.0-128
(S) a,a,a-Trifluorotoluene(PID)	100		54.0-144

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/20/15 16:09 • (LCSD) 07/20/15 16:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0511	0.0514	102	103	70.0-130			0.580	20
Toluene	0.0500	0.0519	0.0520	104	104	70.0-130			0.170	20
Ethylbenzene	0.0500	0.0522	0.0523	104	105	70.0-130			0.360	20
Total Xylene	0.150	0.155	0.155	103	103	70.0-130			0.140	20
(S) a,a,a-Trifluorotoluene(FID)				108	108	59.0-128				
(S) a,a,a-Trifluorotoluene(PID)				109	109	54.0-144				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/20/15 16:54 • (LCSD) 07/20/15 17:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	6.02	6.02	109	109	63.5-137			0.0600	20
(S) a,a,a-Trifluorotoluene(FID)				108	108	59.0-128				
(S) a,a,a-Trifluorotoluene(PID)				116	117	54.0-144				

L777281-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 07/20/15 18:26 • (MS) 07/20/15 22:06 • (MSD) 07/20/15 22:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	ND	0.218	0.225	87.1	89.9	5	49.7-127			3.11	23.5



L777281-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 07/20/15 18:26 • (MS) 07/20/15 22:06 • (MSD) 07/20/15 22:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Toluene	0.0500	ND	0.216	0.221	86.2	88.6	5	49.8-132			2.68	23.5
Ethylbenzene	0.0500	ND	0.210	0.216	84.1	86.5	5	40.8-141			2.89	23.8
Total Xylene	0.150	0.000763	0.630	0.650	83.9	86.5	5	41.2-140			3.00	23.7
(S) a,a,a-Trifluorotoluene(FID)					105	103		59.0-128				
(S) a,a,a-Trifluorotoluene(PID)					106	105		54.0-144				

L777281-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 07/20/15 18:26 • (MS) 07/20/15 22:50 • (MSD) 07/20/15 23:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	25.9	21.6	94.1	78.6	5	28.5-138			17.9	23.6
(S) a,a,a-Trifluorotoluene(FID)					106	104		59.0-128				
(S) a,a,a-Trifluorotoluene(PID)					115	114		54.0-144				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 07/19/15 10:41

Analyte	MB Result	MB Qualifier	MB RDL
	mg/kg		mg/kg
TPH (GC/FID) High Fraction	ND		4.00
<i>(S) o-Terphenyl</i>	99.0		50.0-150

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/19/15 10:51 • (LCSD) 07/19/15 11:01

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
TPH (GC/FID) High Fraction	60.0	54.6	54.7	91.0	91.2	50.0-150			0.240	20
<i>(S) o-Terphenyl</i>				94.5	87.9	50.0-150				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 07/17/15 04:48

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Acenaphthene	ND		0.0330
Acenaphthylene	ND		0.0330
Anthracene	ND		0.0330
Benzidine	ND		0.333
Benzo(a)anthracene	ND		0.0330
Benzo(b)fluoranthene	ND		0.0330
Benzo(k)fluoranthene	ND		0.0330
Benzo(g,h,i)perylene	ND		0.0330
Benzo(a)pyrene	ND		0.0330
Bis(2-chlorethoxy)methane	ND		0.333
Bis(2-chloroethyl)ether	ND		0.333
Bis(2-chloroisopropyl)ether	ND		0.333
4-Bromophenyl-phenylether	ND		0.333
2-Chloronaphthalene	ND		0.0330
4-Chlorophenyl-phenylether	ND		0.333
Chrysene	ND		0.0330
Dibenz(a,h)anthracene	ND		0.0330
3,3-Dichlorobenzidine	ND		0.333
2,4-Dinitrotoluene	ND		0.333
2,6-Dinitrotoluene	ND		0.333
Fluoranthene	ND		0.0330
Fluorene	ND		0.0330
Hexachlorobenzene	ND		0.333
Hexachloro-1,3-butadiene	ND		0.333
Hexachlorocyclopentadiene	ND		0.333
Hexachloroethane	ND		0.333
Indeno(1,2,3-cd)pyrene	ND		0.0330
Isophorone	ND		0.333
Naphthalene	ND		0.0330
Nitrobenzene	ND		0.333
n-Nitrosodimethylamine	ND		0.333
n-Nitrosodiphenylamine	ND		0.333
n-Nitrosodi-n-propylamine	ND		0.333
Phenanthrene	ND		0.0330
Benzylbutyl phthalate	ND		0.333
Bis(2-ethylhexyl)phthalate	ND		0.333

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 07/17/15 04:48

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Di-n-butyl phthalate	ND		0.333
Diethyl phthalate	ND		0.333
Dimethyl phthalate	ND		0.333
Di-n-octyl phthalate	ND		0.333
Pyrene	ND		0.0330
1,2,4-Trichlorobenzene	ND		0.333
4-Chloro-3-methylphenol	ND		0.333
2-Chlorophenol	ND		0.333
2,4-Dichlorophenol	ND		0.333
2,4-Dimethylphenol	ND		0.333
4,6-Dinitro-2-methylphenol	ND		0.333
2,4-Dinitrophenol	ND		0.333
2-Nitrophenol	ND		0.333
4-Nitrophenol	ND		0.333
Pentachlorophenol	ND		0.333
Phenol	ND		0.333
2,4,6-Trichlorophenol	ND		0.333
(S) Nitrobenzene-d5	73.4		21.9-129
(S) 2-Fluorobiphenyl	73.8		34.9-129
(S) p-Terphenyl-d14	69.4		21.5-128
(S) Phenol-d5	73.1		26.3-121
(S) 2-Fluorophenol	76.6		21.1-116
(S) 2,4,6-Tribromophenol	73.6		21.6-142

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/17/15 04:01 • (LCSD) 07/17/15 04:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	0.534	0.566	80.1	84.8	48.9-107			5.68	20
Acenaphthylene	0.667	0.548	0.554	82.1	83.1	49.2-111			1.17	20
Anthracene	0.667	0.506	0.519	75.8	77.8	52.0-112			2.56	20
Benzidine	0.667	0.0741	0.118	11.1	17.7	0.000-48.0		J3	45.9	40
Benzo(a)anthracene	0.667	0.557	0.559	83.6	83.8	52.3-106			0.330	20
Benzo(b)fluoranthene	0.667	0.552	0.547	82.8	82.0	51.3-106			0.920	20
Benzo(k)fluoranthene	0.667	0.517	0.544	77.5	81.5	52.9-107			4.97	20



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/17/15 04:01 • (LCSD) 07/17/15 04:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzo(g,h,i)perylene	0.667	0.578	0.586	86.7	87.9	45.8-108			1.42	20
Benzo(a)pyrene	0.667	0.541	0.545	81.1	81.8	51.9-106			0.790	20
Bis(2-chlorethoxy)methane	0.667	0.491	0.478	73.6	71.7	44.9-108			2.53	20
Bis(2-chloroethyl)ether	0.667	0.423	0.409	63.3	61.4	32.5-112			3.18	26
Bis(2-chloroisopropyl)ether	0.667	0.429	0.444	64.3	66.5	40.4-99.0			3.49	20.7
4-Bromophenyl-phenylether	0.667	0.588	0.580	88.1	86.9	51.4-110			1.38	20
2-Chloronaphthalene	0.667	0.537	0.574	80.6	86.0	47.1-105			6.54	20
4-Chlorophenyl-phenylether	0.667	0.530	0.564	79.5	84.5	48.1-108			6.12	20
Chrysene	0.667	0.538	0.539	80.6	80.8	54.4-110			0.210	20
Dibenz(a,h)anthracene	0.667	0.567	0.575	85.0	86.2	45.7-111			1.36	20
3,3-Dichlorobenzidine	0.667	0.492	0.490	73.8	73.5	21.0-101			0.500	22
2,4-Dinitrotoluene	0.667	0.550	0.555	82.4	83.3	53.0-112			0.990	20
2,6-Dinitrotoluene	0.667	0.559	0.573	83.9	86.0	51.6-110			2.49	20
Fluoranthene	0.667	0.517	0.528	77.5	79.1	53.7-110			2.09	20
Fluorene	0.667	0.537	0.553	80.6	82.9	51.1-109			2.87	20
Hexachlorobenzene	0.667	0.551	0.541	82.6	81.1	43.2-104			1.81	20.1
Hexachloro-1,3-butadiene	0.667	0.511	0.533	76.6	79.9	41.5-112			4.20	20
Hexachlorocyclopentadiene	0.667	0.286	0.295	42.9	44.3	13.5-123			3.03	20.7
Hexachloroethane	0.667	0.455	0.481	68.2	72.0	36.2-103			5.43	22.7
Indeno(1,2,3-cd)pyrene	0.667	0.577	0.591	86.5	88.6	47.5-109			2.39	20
Isophorone	0.667	0.562	0.565	84.2	84.7	28.8-104			0.610	20
Naphthalene	0.667	0.485	0.501	72.7	75.1	43.4-103			3.28	20
Nitrobenzene	0.667	0.558	0.565	83.7	84.7	40.7-109			1.17	21
n-Nitrosodimethylamine	0.667	0.499	0.514	74.8	77.1	18.1-122			3.06	23.5
n-Nitrosodiphenylamine	0.667	0.523	0.537	78.4	80.5	48.8-107			2.63	20
n-Nitrosodi-n-propylamine	0.667	0.505	0.516	75.7	77.4	43.3-109			2.24	20
Phenanthrene	0.667	0.502	0.500	75.3	75.0	51.6-107			0.460	20
Benzylbutyl phthalate	0.667	0.574	0.580	86.0	87.0	47.5-115			1.14	20
Bis(2-ethylhexyl)phthalate	0.667	0.580	0.582	86.9	87.2	48.1-116			0.330	20.5
Di-n-butyl phthalate	0.667	0.540	0.541	80.9	81.1	49.7-113			0.240	20
Diethyl phthalate	0.667	0.576	0.590	86.4	88.4	52.0-112			2.34	20
Dimethyl phthalate	0.667	0.562	0.573	84.2	85.9	51.4-108			1.97	20
Di-n-octyl phthalate	0.667	0.559	0.552	83.8	82.8	49.6-112			1.23	22
Pyrene	0.667	0.547	0.548	82.0	82.1	47.1-108			0.150	20
1,2,4-Trichlorobenzene	0.667	0.476	0.485	71.4	72.8	39.8-100			1.87	20
4-Chloro-3-methylphenol	0.667	0.534	0.519	80.0	77.8	51.1-113			2.83	20

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 07/17/15 04:01 • (LCSD) 07/17/15 04:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Chlorophenol	0.667	0.495	0.499	74.3	74.8	40.8-103			0.730	20
2,4-Dichlorophenol	0.667	0.533	0.541	80.0	81.1	46.2-109			1.41	20
2,4-Dimethylphenol	0.667	0.545	0.530	81.8	79.5	42.2-110			2.85	20
4,6-Dinitro-2-methylphenol	0.667	0.479	0.512	71.8	76.8	23.1-119			6.72	23.7
2,4-Dinitrophenol	0.667	0.350	0.345	52.4	51.8	10.0-105			1.29	36.5
2-Nitrophenol	0.667	0.552	0.534	82.7	80.1	44.2-113			3.27	20.9
4-Nitrophenol	0.667	0.495	0.472	74.2	70.8	34.8-109			4.61	20
Pentachlorophenol	0.667	0.448	0.426	67.2	63.8	16.2-102			5.14	22.9
Phenol	0.667	0.510	0.499	76.4	74.8	41.5-106			2.10	20
2,4,6-Trichlorophenol	0.667	0.555	0.592	83.2	88.7	44.4-108			6.37	20
(S) Nitrobenzene-d5				85.4	87.0	21.9-129				
(S) 2-Fluorobiphenyl				83.5	89.1	34.9-129				
(S) p-Terphenyl-d14				71.3	84.4	21.5-128				
(S) Phenol-d5				78.5	76.9	26.3-121				
(S) 2-Fluorophenol				80.2	81.4	21.1-116				
(S) 2,4,6-Tribromophenol				78.5	82.3	21.6-142				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

L777349-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 07/17/15 08:42 • (MS) 07/17/15 09:05 • (MSD) 07/17/15 09:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	ND	0.523	0.523	78.4	78.4	1	32.2-134			0.110	27.3
Acenaphthylene	0.667	ND	0.497	0.522	74.5	78.2	1	38.7-129			4.90	25.9
Anthracene	0.667	ND	0.484	0.508	72.6	76.2	1	32.3-137			4.78	28.4
Benzidine	0.667	ND	0.0187	0.0172	2.80	2.58	1	0.000-49.9			8.31	40
Benzo(a)anthracene	0.667	ND	0.522	0.526	78.2	78.9	1	33.3-124			0.860	29
Benzo(b)fluoranthene	0.667	ND	0.547	0.565	82.0	84.7	1	23.3-133			3.23	30.3
Benzo(k)fluoranthene	0.667	ND	0.527	0.528	79.0	79.1	1	31.0-129			0.180	26.7
Benzo(g,h,i)perylene	0.667	ND	0.409	0.388	61.3	58.2	1	10.0-127			5.11	31.9
Benzo(a)pyrene	0.667	ND	0.529	0.533	79.4	79.8	1	28.2-128			0.610	28.4
Bis(2-chlorethoxy)methane	0.667	ND	0.449	0.437	67.3	65.5	1	35.0-132			2.77	26.1
Bis(2-chloroethyl)ether	0.667	ND	0.404	0.399	60.5	59.8	1	28.8-128			1.18	33.6
Bis(2-chloroisopropyl)ether	0.667	ND	0.437	0.420	65.5	62.9	1	31.8-118			4.03	31.7
4-Bromophenyl-phenylether	0.667	ND	0.534	0.579	80.0	86.8	1	39.0-130			8.15	26
2-Chloronaphthalene	0.667	ND	0.523	0.538	78.4	80.7	1	37.5-123			2.87	26.5



L777349-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 07/17/15 08:42 • (MS) 07/17/15 09:05 • (MSD) 07/17/15 09:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
4-Chlorophenyl-phenylether	0.667	ND	0.521	0.536	78.1	80.3	1	37.9-123			2.84	25.9
Chrysene	0.667	ND	0.516	0.515	77.4	77.2	1	36.3-129			0.300	28
Dibenz(a,h)anthracene	0.667	ND	0.417	0.415	62.5	62.3	1	10.5-128			0.350	29.5
3,3-Dichlorobenzidine	0.667	ND	0.377	0.403	56.5	60.5	1	10.0-129			6.79	40
2,4-Dinitrotoluene	0.667	ND	0.534	0.517	80.1	77.5	1	27.8-147			3.28	29.7
2,6-Dinitrotoluene	0.667	ND	0.528	0.557	79.1	83.6	1	36.5-137			5.43	29.7
Fluoranthene	0.667	ND	0.510	0.530	76.4	79.5	1	27.9-138			3.92	26.9
Fluorene	0.667	ND	0.511	0.515	76.6	77.2	1	34.0-133			0.800	27.1
Hexachlorobenzene	0.667	ND	0.489	0.514	73.3	77.1	1	34.4-116			5.02	25.4
Hexachloro-1,3-butadiene	0.667	ND	0.496	0.479	74.3	71.8	1	36.5-125			3.41	29.7
Hexachlorocyclopentadiene	0.667	ND	0.172	0.188	25.8	28.1	1	10.0-124			8.80	37.5
Hexachloroethane	0.667	ND	0.433	0.440	64.9	65.9	1	11.3-143			1.53	31.9
Indeno(1,2,3-cd)pyrene	0.667	ND	0.429	0.433	64.4	64.9	1	10.0-128			0.840	31.5
Isophorone	0.667	ND	0.503	0.507	75.4	76.0	1	25.7-116			0.780	27.7
Naphthalene	0.667	ND	0.459	0.452	68.8	67.7	1	36.4-121			1.63	27.2
Nitrobenzene	0.667	ND	0.531	0.534	79.6	80.1	1	30.9-134			0.670	27.8
n-Nitrosodimethylamine	0.667	ND	0.469	0.451	70.3	67.6	1	19.2-127			3.95	32
n-Nitrosodiphenylamine	0.667	ND	0.467	0.507	70.0	76.0	1	26.8-133			8.13	25.9
n-Nitrosodi-n-propylamine	0.667	ND	0.493	0.490	73.9	73.4	1	33.0-134			0.670	28.2
Phenanthrene	0.667	ND	0.473	0.487	70.9	73.0	1	30.8-137			3.01	26.5
Benzylbutyl phthalate	0.667	ND	0.502	0.520	75.2	77.9	1	33.4-128			3.53	28.5
Bis(2-ethylhexyl)phthalate	0.667	ND	0.510	0.521	76.5	78.2	1	21.8-141			2.13	35.2
Di-n-butyl phthalate	0.667	ND	0.506	0.512	75.9	76.8	1	32.2-133			1.18	25.9
Diethyl phthalate	0.667	ND	0.535	0.556	80.2	83.3	1	39.4-136			3.78	25.5
Dimethyl phthalate	0.667	ND	0.529	0.538	79.3	80.6	1	35.8-137			1.63	25.4
Di-n-octyl phthalate	0.667	ND	0.501	0.511	75.0	76.6	1	28.5-128			2.05	32.5
Pyrene	0.667	ND	0.485	0.486	72.7	72.8	1	24.1-130			0.210	29.9
1,2,4-Trichlorobenzene	0.667	ND	0.456	0.442	68.4	66.2	1	36.5-114			3.27	28.4
4-Chloro-3-methylphenol	0.667	ND	0.477	0.488	71.5	73.2	1	27.0-154			2.28	26.6
2-Chlorophenol	0.667	ND	0.469	0.469	70.3	70.3	1	33.2-121			0.0400	29.3
2,4-Dichlorophenol	0.667	ND	0.493	0.503	73.9	75.4	1	34.8-134			1.98	27.3
2,4-Dimethylphenol	0.667	ND	0.404	0.426	60.5	63.9	1	12.3-149			5.40	32.3
4,6-Dinitro-2-methylphenol	0.667	ND	0.242	0.254	36.2	38.0	1	10.0-144			4.75	32.7
2,4-Dinitrophenol	0.667	ND	0.132	0.139	19.8	20.9	1	10.0-121			5.06	39.4
2-Nitrophenol	0.667	ND	0.532	0.493	79.8	74.0	1	29.5-144			7.57	29.9
4-Nitrophenol	0.667	ND	0.459	0.510	68.8	76.4	1	20.0-133			10.5	30.2

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



L777349-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 07/17/15 08:42 • (MS) 07/17/15 09:05 • (MSD) 07/17/15 09:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Pentachlorophenol	0.667	ND	0.480	0.486	72.0	72.8	1	10.0-139			1.12	28.3
Phenol	0.667	ND	0.470	0.460	70.5	68.9	1	25.1-130			2.29	29.6
2,4,6-Trichlorophenol	0.667	ND	0.547	0.592	82.0	88.8	1	33.8-133			7.91	28.1
<i>(S) Nitrobenzene-d5</i>					77.7	78.7		21.9-129				
<i>(S) 2-Fluorobiphenyl</i>					76.9	81.6		34.9-129				
<i>(S) p-Terphenyl-d14</i>					64.1	63.9		21.5-128				
<i>(S) Phenol-d5</i>					67.9	70.3		26.3-121				
<i>(S) 2-Fluorophenol</i>					72.7	76.4		21.1-116				
<i>(S) 2,4,6-Tribromophenol</i>					76.4	76.0		21.6-142				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

## Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**

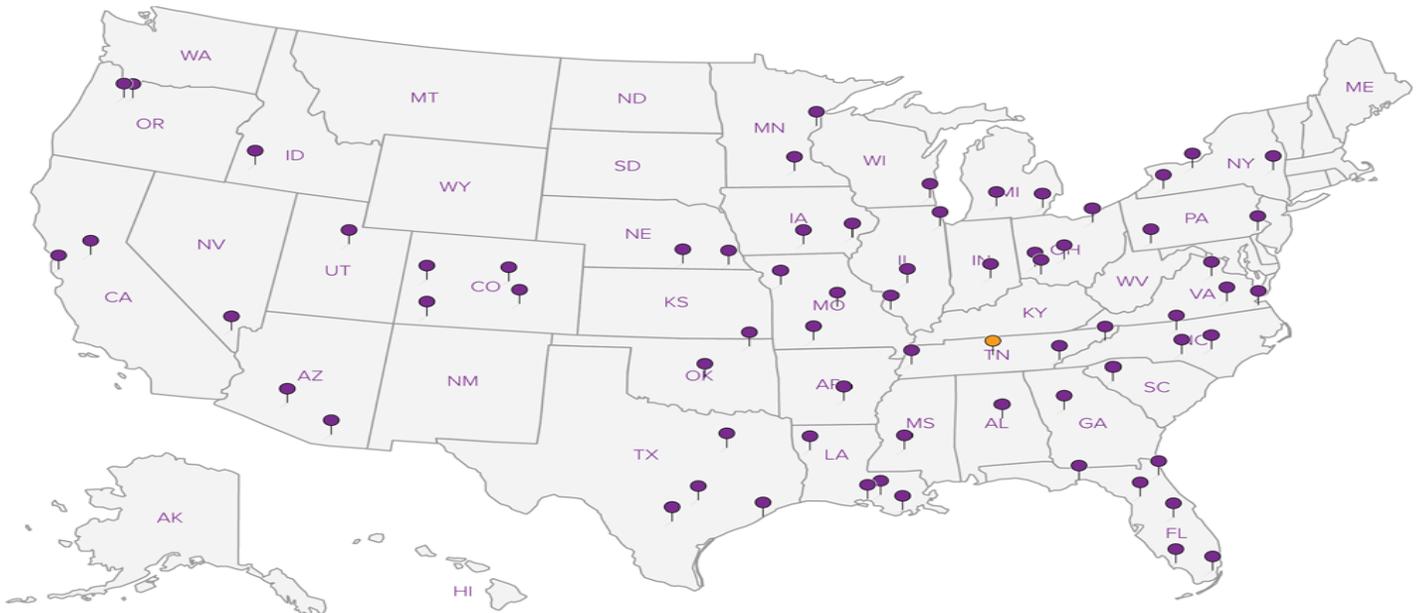




Table 910-1 CONCENTRATION LEVELS<sup>1</sup>

Contaminant of Concern	Concentrations
<b>Organic Compounds in Soil</b>	
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg
Benzene	0.17 mg/kg <sup>2</sup>
Toluene	85 mg/kg <sup>2</sup>
Ethylbenzene	100 mg/kg <sup>2</sup>
Xylenes (total)	175 mg/kg <sup>2</sup>
Acenaphthene	1,000 mg/kg <sup>2</sup>
Anthracene	1,000 mg/kg <sup>2</sup>
Benz(a)anthracene	0.22 mg/kg <sup>2</sup>
Benzo(b)fluoranthene	0.22 mg/kg <sup>2</sup>
Benzo(k)fluoranthene	2.2 mg/kg <sup>2</sup>
Benzo(a)pyrene	0.022 mg/kg <sup>2</sup>
Chrysene	22 mg/kg <sup>2</sup>
Dibenzo(a,h)anthracene	0.022 mg/kg <sup>2</sup>
Fluoranthene	1,000 mg/kg <sup>2</sup>
Fluorene	1,000 mg/kg <sup>2</sup>
Indeno(1,2,3,c,d)pyrene	0.22 mg/kg <sup>2</sup>
Naphthalene	23 mg/kg <sup>2</sup>
Pyrene	1,000 mg/kg <sup>2</sup>
<b>Organic Compounds in Ground Water</b>	
Benzene	5 µg/l <sup>3</sup>
Toluene	560 to 1,000 µg/l <sup>3</sup>
Ethylbenzene	700 µg/l <sup>3</sup>
Xylenes (Total)	1,400 to 1,000 µg/l <sup>3,4</sup>
<b>Inorganics in Soils</b>	
Electrical Conductivity (EC)	4 mmhos/cm or 2x background
Sodium Adsorption Ratio (SAR)	<12 <sup>5</sup>
pH	6-9
<b>Inorganics in Ground Water</b>	
Total Dissolved Solids (TDS)	<1.25 x background <sup>3</sup>
Chlorides	<1.25 x background <sup>3</sup>
Sulfates	1.25 x background <sup>3</sup>
<b>Metals in Soils</b>	
Arsenic	0.99 mg/kg <sup>2</sup>
Barium (LDNR True Total Barium)	15,000 mg/kg <sup>2</sup>
Boron (Hot Water Soluble)	2 mg/l <sup>3</sup>
Cadmium	70 mg/kg <sup>3,6</sup>
Chromium (III)	120,000 mg/kg <sup>2</sup>
Chromium (VI)	23 mg/kg <sup>2,6</sup>
Copper	3,100 mg/kg <sup>2</sup>
Lead (inorganic)	400 mg/kg <sup>2</sup>
Mercury	23 mg/kg <sup>2</sup>
Nickel (soluble salts)	1,600 mg/kg <sup>2,6</sup>
Selenium	390 mg/kg <sup>2,6</sup>
Silver	390 mg/kg <sup>2</sup>
Zinc	23,000 mg/kg <sup>2,6</sup>
<b>Liquid Hydrocarbons in Soils and Ground Water</b>	
Liquid hydrocarbons including condensate and oil	Below detection level

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COGCC recommends that the latest version of EPA SW 846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs.

- <sup>1</sup> Consideration shall be given to background levels in native soils and ground water.
- <sup>2</sup> Concentrations taken from CDPHE-HMWMD Table 1 Colorado Soil Evaluation Values (December 2007).
- <sup>3</sup> Concentrations taken from CDPHE-WQCC Regulation 41 - The Basic Standards for Ground Water.
- <sup>4</sup> For this range of standards, the first number in the range is a strictly health-based value, based on the WQCC's established methodology for human health-based standards. The second number in the range is a maximum contaminant level (MCL), established under the Federal Safe Drinking Water Act which has been determined to be an acceptable level of this chemical in public water supplies, taking treatability and laboratory detection limits into account. The WQCC intends that control requirements for this chemical be implemented to attain a level of ambient water quality that is at least equal to the first number in the range except as follows: 1) where ground water quality exceeds the first number in the range due to a release of contaminants that occurred prior to September 14, 2004 (regardless of the date of discovery or subsequent migration of such contaminants) clean-up levels for the entire contaminant plume shall be no more restrictive than the second number in the range or the ground water quality resulting from such release, whichever is more protective, and 2) whenever the WQCC has adopted alternative, site-specific standards for the chemical, the site-specific standards shall apply instead of these statewide standards.
- <sup>5</sup> Analysis by USDA Agricultural Handbook 60 method (20B) with soluble cations determined by method (2). Method (20B) = estimation of exchangeable sodium percentage and exchangeable potassium percentage from soluble cations. Method (2) = saturated paste method (note: each analysis requires a unique sample of at least 500 grams). If soils are saturated, USDA Agricultural Handbook 60 with soluble cations determined by method (3A) saturation extraction method.
- <sup>6</sup> The table value for these inorganic constituents is taken from the CDPHE-HMWMD Table 1 Colorado Soil Evaluation Values (December 2007). However, because these values are high, it is possible that site-specific geochemical conditions may exist that could allow these constituents to migrate into ground water at