

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 9751
Document 2526566
Date 04/01/2016

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): TANK PULL

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10311

Name of Operator: Synergy Resources Corporation

Address: 20203 Highway 60

City: Platteville State: CO Zip: 80651

Contact Name and Telephone:

David Pennington

No: 970-230-0435

Fax: 970-737-1045

API Number: 05-123-16082

County: Weld #123

Facility Name: Struck

Facility Number: 61N67W36NWNE

Well Name: Struck

Well Number: 1

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWNE 36 1N 67W 6 Latitude: 40.011804 Longitude: -104.838930

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): N/A

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.): Non-developed

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Altvan loam, 1-3% slope

Potential receptors (water wells within 1/4 mi, surface waters, etc.): 7 DWR Wells within 1/4 miles, PEMC Freshwater Emergent Wetland 0.1 mile northeast of facility

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

Impacted Media (check):

☐

Soils

☐

Vegetation

☐

Groundwater

☐

Surface Water

Extent of Impact:

N/A

How Determined:

Excavation

REMEDIALATION WORKPLAN

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

This F27 is for a partially burried produced water vault removal. Please see attached Summary Report and Closure Request for additional details.

Describe how source is to be removed:

This F27 is for a partially burried produced water vault removal. Please see attached Summary Report and Closure Request for additional details.

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.:

This F27 is for a partially burried produced water vault removal. Please see attached Summary Report and Closure Request for additional details.



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

OGCC Employee: _____

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

This F27 is for a partially burried produced water vault removal. Please see attached Summary Report and Closure Request for additional details.v

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.

This facility is currently under production. A reclamation plan will be submitted in the event that the facility is closed.

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:

This F27 is for a partially burried produced water vault removal. Please see attached Summary Report and Closure Request for additional details.

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

This F27 is for a partially burried produced water vault removal. Please see attached Summary Report and Closure Request for additional details.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: <u>3/15/2016</u>	Date Site Investigation Completed: <u>3/16/2016</u>	Date Remediation Plan Submitted: <u>NA</u>
Remediation Start Date: <u>NA</u>	Anticipated Completion Date: <u>3/29/2016</u>	Actual Completion Date: <u>3/29/2016</u>

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

Print Name: David Pennington Signed: David Pennington
Title: EHS Construction Superintendent Date: 3/31/2016

OGCC Approved: _____ Title: _____ Date: _____



March 31, 2016

Mr. Chris Canfield
Environmental Protection Specialist
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**RE: Struck #1 Tank Battery (API # 05-123-16082)
Form 27 - Summary Report and Closure Request
Synergy Resources Corporation
Platteville, Colorado**

Dear Mr. Canfield;

LT Environmental, Inc. (LTE) has prepared this Summary Report and Closure Request on behalf of Synergy Resources Corporation (Synergy) to provide the Colorado Oil and Gas Conservation Commission (COGCC) with partially buried produced water tank removal and closure documentation for the Struck #1 Tank Battery (Site). This work has been conducted in accordance with the COGCC Regulation 905.b.4. The Site legal location is the northwest quarter of the northeast quarter of Section 36, Township 1 North, Range 67 West, 6th Principal Meridian. The Site Location Map is provided as Figure 1.

In December 2015, Synergy removed a partially buried produced water tank from the Site. The tank was removed and confirmation sampling was conducted in accordance with the work plan identified below.

Partially Buried Tank Removal and Closure

The COGCC Rule 900 Series regulates the closure of pits not used exclusively for drilling operations, buried or partially buried produced water vessels, and emergency pits. Synergy followed the requirements identified in the COGCC Rule 905.b.(1-4) when performing tank closure activities. Excavation oversight, soil and groundwater sampling, and analytical procedures were performed as follows:

- Synergy pumped liquids out of produced water vessels prior to removing. The produced water was handled in accordance with COGCC Rule 907.c.(1-4) Produced Water Disposal;
- Synergy observed and documented the tank-grave sidewalls and floor for evidence of environmental impacts including hydrocarbon staining, odor, or volatile organic carbon (VOC) using a photo ionization detector (PID);
- Synergy excavated soils suspected to contain hydrocarbon concentrations higher than the COGCC Table 910-1. The excavated soils were handled and transported in accordance with COGCC Rule 907.a General Requirements and 907.b Waste transportation.



- Synergy collected confirmation soil and/or groundwater samples from the excavation in accordance with the following:
 - Observed and documented the extent of the excavation including length, width, and depth;
 - Observed and documented the presence of groundwater in the excavation;
 - Screened and documented VOCs in the sidewall and floor soils using a PID;
 - Collected representative soil samples from the sidewalls of the excavation for COGCC Table 910-1 organic compounds in soil including; benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbon (TPH)-gasoline range organics (GRO), and TPH-diesel range organics (DRO) analysis. The soil samples were collected from soils with the highest PID reading or from soils that have evidence of hydrocarbon impacts including staining or odor;
 - Collected a representative soil sample from the floor of the excavation for COGCC Table 910-1 organic compounds in soil including: BTEX, TPH-GRO, and TPH-DRO; and
 - In the event that groundwater was encountered in the excavation, Synergy collected 1 groundwater sample in lieu of a representative soil sample. The groundwater sample was analyzed for COGCC Table 910-1 organic compounds in groundwater including BTEX.

Results and Summary

LTE did not observe groundwater in the excavation. Synergy excavated approximately 40 cubic yards of impacted soil from the tank grave and transported it, under waste manifest protocol, to a licensed disposal facility. LTE collected one soil sample from each of the sidewalls of the excavation (SS01@2', SS02@4', SS03@3', and SS04@2') and one soil sample from the floor of the excavation (SS05@5.5'). The soil sample analytical results were within the COGCC Table 910-1 limits for BTEX and TPH. The analytical results are provided in Table 1 and the laboratory report is attached.

Table 1: Analytical Results Summary

Sample ID	Units	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	TPH
SS01@2'	mg/kg	<0.01	<0.01	<0.01	<0.01	<50
SS02@4'	mg/kg	<0.01	<0.01	<0.01	<0.01	490
SS03@3'	mg/kg	<0.01	<0.01	<0.01	<0.01	<50
SS04@2'	mg/kg	<0.01	<0.01	<0.01	<0.01	<50
SS05@5.5'	mg/kg	<0.01	<0.01	<0.01	0.052	449
COGCC Table 910-1 Standards	mg/kg	0.17	85	100	175	500

Notes:

mg/kg – milligrams per kilogram

< - Analytical results below laboratory reporting limits

TPH – Total Petroleum Hydrocarbons

BOLD – Indicates sample analytical results exceeded applicable standards



Based on the field observations and analytical results of the samples, LTE respectfully requests that the COGCC grant a decision of no further action for this Site. Should you have any questions or comments please feel free to contact the undersigned at 970-230-0435.

Sincerely,

LT Environmental, Inc.;

A handwritten signature in blue ink that reads 'Jess Alexander'.

Jess Alexander
Project Environmental Scientist

A handwritten signature in blue ink that reads 'Steve Kahn'.

Steve Kahn, P.E.
Vice President

cc: Mr. Jerry Brian, Director EHS, Synergy Resources Corporation

Figures

Figure 1 – Site Location Map

Figure 2 – Site Map

Attachment 1 – Laboratory Analytical Report

FIGURES

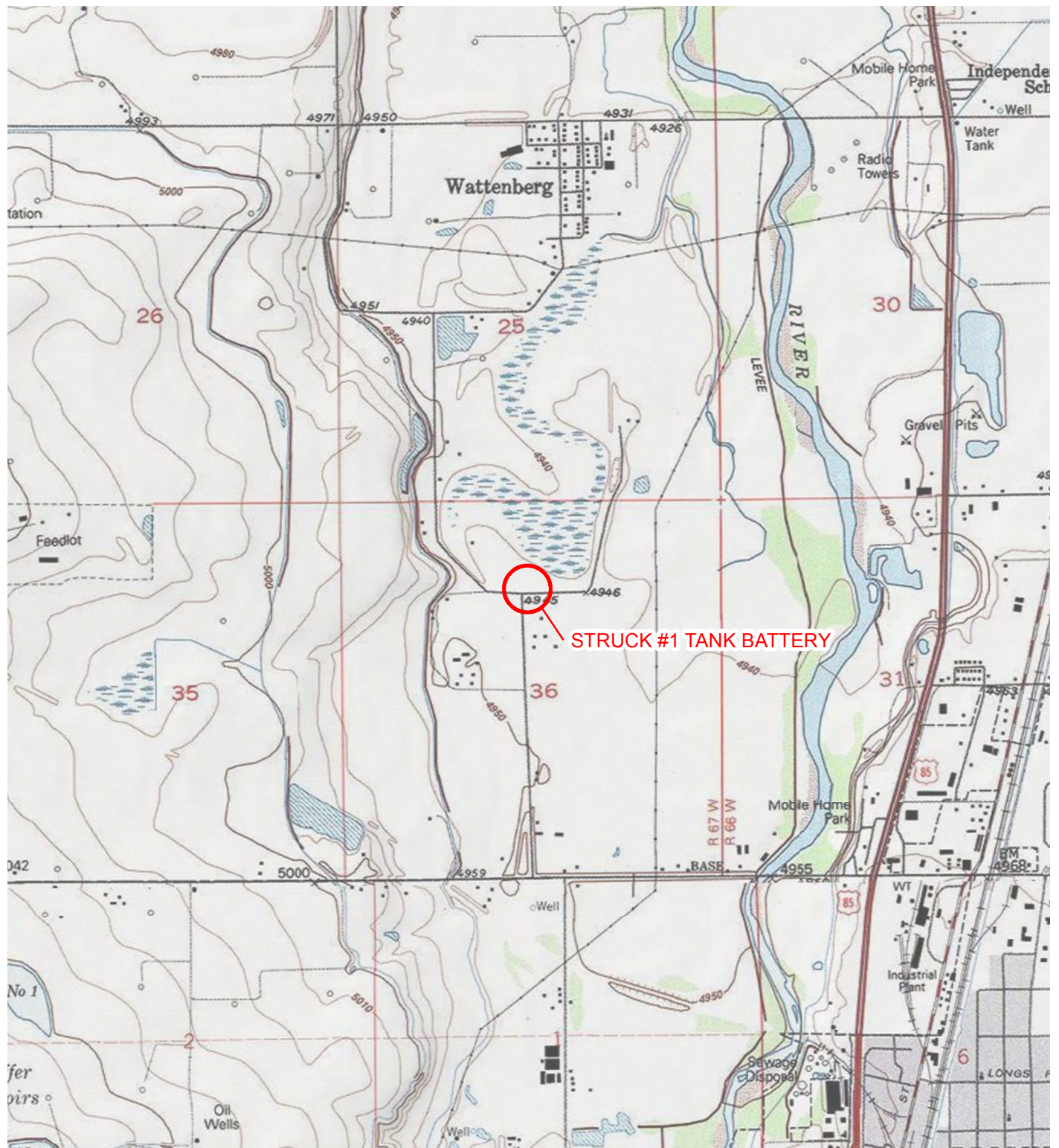


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION

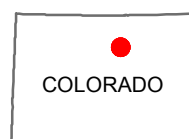
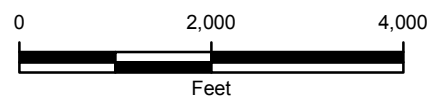
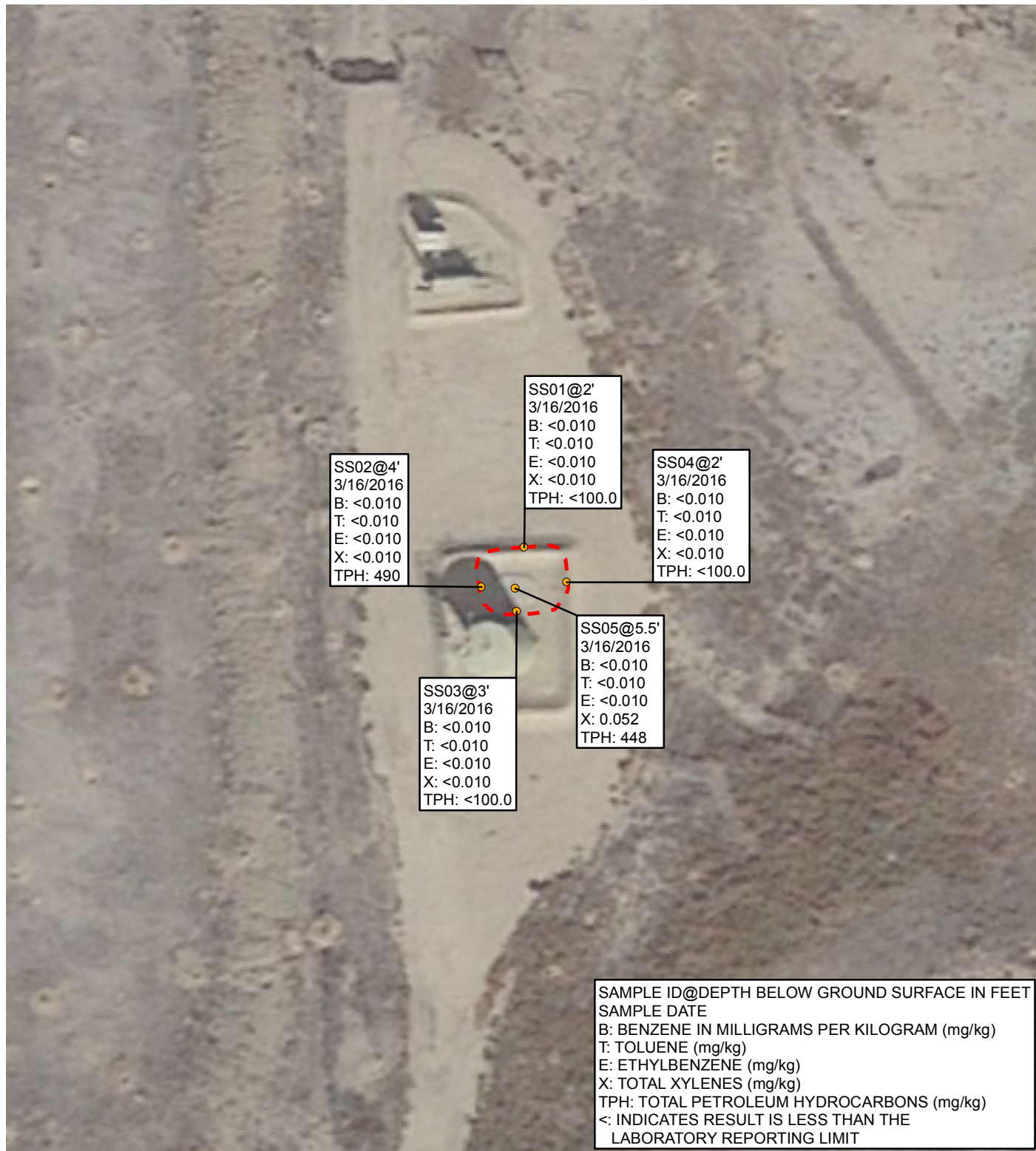


FIGURE 1
SITE LOCATION MAP
STRUCK #1 TANK BATTERY
NENW SEC 36-T1N-R67W
WELD COUNTY, COLORADO
SYNERGY RESOURCES CORPORATION





LEGEND

- SOIL SAMPLE
- - - EXCAVATION EXTENT

IMAGE COURTESY OF GOOGLE EARTH 2015

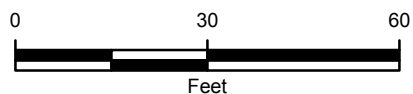


FIGURE 2
SITE MAP
STRUCK #1 TANK BATTERY
NENW SEC 36-T1N-R67W
WELD COUNTY, COLORADO
SYNERGY RESOURCES CORPORATION



ATTACHMENT 1

Test Report



March 17, 2016

Client: LT Environmental

Project: Struck #1

Lab ID: 4826

Date Samples Received: 3/17/2016

Number of Samples: 5

Sample Condition: Samples arrived intact and in appropriate sample containers

Sample Temperature: Samples arrived within the acceptable temperature range as specified in the test method

Comments:

Thank you for allowing eAnalytics Laboratory to provide laboratory services for you.

A handwritten signature in black ink, appearing to read "Chris Dieken".

Christopher Dieken
Quality Assurance Manager

A handwritten signature in black ink, appearing to read "Todd Rhea".

Todd Rhea
Laboratory Manager

eAnalytics Laboratory

4130 Clydesdale Parkway Loveland CO 80538

Chain of Custody

eANALYTICS
LABORATORY

Chain of Custody Form

[illegible]

WO# 4826

eANALYTICS: Environmental testing made Easy

Page of

eAnalytics Laboratory

4130 Clydesdale Parkway Loveland CO 80538

The results contained within this report relate only to the items analyzed

eANALYTICS
LABORATORY

Client: LT Environmental

Lab ID: 4826

Project: Struck #1

Analysis: Volatile Organics
TPH-GRO/DROMethod: EPA8260
EPA8260/8015

Sample Name	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPH- GRO	TPH- DRO	Date Sampled	Date Analyzed	Lab ID	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				
SS01 @ 2'	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	03/16/16	03/17/16	4826	1
SS02 @ 4'	<0.010	<0.010	<0.010	<0.010	<50.0	490	03/16/16	03/17/16	4826	2
SS03 @ 3'	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	03/16/16	03/17/16	4826	3
SS04 @ 2'	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	03/16/16	03/17/16	4826	4
SS05 @ 5.5'	<0.010	<0.010	<0.010	0.052	<50.0	448	03/16/16	03/17/16	4826	5

eAnalytics Laboratory

4130 Clydesdale Parkway Loveland CO 80538

eANALYTICS
LABORATORY

Client: LT Environmental

Lab ID: 4826

Project: Struck #1

Method: EPA8260

Sample Name	Dibromo- fluoromethane % Recovery	1,2 Dichloro- ethane-D4 % Recovery	Toluene-D8 % Recovery	Bromo- fluorobenzene % Recovery	Date Sampled	Date Analyzed	Lab ID
SS01 @ 2'	104	108	102	92	03/16/16	03/17/16	4826 1
SS02 @ 4'	100	109	95	88	03/16/16	03/17/16	4826 2
SS03 @ 3'	107	103	98	89	03/16/16	03/17/16	4826 3
SS04 @ 2'	96	89	108	84	03/16/16	03/17/16	4826 4
SS05 @ 5.5'	105	106	104	94	03/16/16	03/17/16	4826 5

eAnalytics Laboratory

4130 Clydesdale Parkway Loveland CO 80538

eANALYTICS
LABORATORY

Client: LT Environmental

Lab ID: 4826

Project: Struck #1

Analysis: Volatile Organics
TPH-GRO/DROMethod: EPA8260
EPA8260/8015

Sample Name	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPH- GRO	TPH- DRO	Date Analyzed	Lab ID	
	% Rec	% Rec	% Rec	% Rec	% Rec	% Rec			
Laboratory Control Sample	99	99	102	93	92	95	03/17/16	LCS	4826 1
(70-130%)									
Method Blank	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	03/17/16	MB	4826 1
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			

eAnalytics Laboratory

4130 Clydesdale Parkway Loveland CO 80538