CORRECTIVE ACTION REPORT

Property:

1003 Potash Relief Valve Overspray
32.180456, -104.051333
NE¼ NE ¼, S35 T24S R28E
Eddy County, New Mexico
ECIRTS: 24531

May 2015
Apex Project No. 7030714G118.001

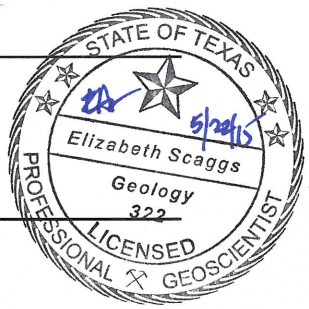
Prepared for:

Enterprise Field Services, LLC
PO Box 4324
Houston, TX 77252
Attention: Dina Ferguson

Prepared by:

Karolanne Toby
Project Geologist

Liz Scaggs, P.G.
Division Manager



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32.180456, -104.051333
NE¼ NE ¼, S35 T24S R28E
Eddy County, New Mexico
ECIRTS: 24531

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1.0 INTRODUCTION

1.1 Site Description & Background

The 1003 Potash relief valve is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the northeast (NE) ¼ of the northeast (NE) ¼ of Section 35 in Township 24 South and Range 28 East in Eddy County, New Mexico, (32.180456, -104.051333) referred to hereinafter as the "Site". The Site is located on property consisting of native vegetation range land periodically interrupted by oil and gas gathering facilities including the Enterprise Potash 1003 natural gas gathering pipeline, which traverses the area northwest to southeast.

On December 20, 2014, Enterprise was informed that the Potash 1003 relief valve had activated, creating an area of impact originating from the pressure relief valve. Liquid contamination was observable around the relief valve. Approximately eight (8) barrels (bbls) of pipeline liquids were released from the pipeline at the relief valve. A fluid spray area was noted, which extended to the north of the pressure relief valve. The surface impact of the spray area is approximately 300 feet long by 100 feet wide. Enterprise initiated a pipeline blowdown to relieve the pressure from the system. Initial remediation activities were conducted on December 20, 2014. Remediation activities resumed January 29, 2015, to treat surface soil impacts from the release of pipeline liquids.

A topographic map depicting the location of the Site is included as Figure 1, and a Site Vicinity Map is included as Figure 2 in Appendix A.

1.2 Project Objective

The primary objective of the corrective actions was to reduce the concentration of constituents of concern (COCs) in the on-Site soils to below the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) *Remediation Action Levels* using the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

2.0 SITE RANKING

In accordance with the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex TITAN, Inc. (Apex) utilized the general site characteristics obtained during the completion of corrective action activities and information available from the New Mexico Office of the State Engineer to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	0
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	0
	No	0	
Distance to Surface Water Body	<200 feet	20	0
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			0

Based on Apex's evaluation of the scoring criteria, the Site would have a Total Ranking Score of "0". This ranking is based on the following:

- The approximate depth to the initial groundwater-bearing zone is greater than 100 feet at the Site.
- Distance from the impacted area to the closest private domestic water source is greater than 200 feet.
- Distance to the nearest surface water body is greater than 1,000 feet.

Based on a Total Ranking Score of 0, cleanup goals for soils remaining in place include: 10 milligrams per kilogram (mg/Kg) for benzene, 50 mg/Kg for total benzene, toluene, ethylbenzene and xylene (BTEX), 5,000 mg/Kg for Total Petroleum Hydrocarbons (TPH) and 1,000 mg/Kg for chlorides.

3.0 RESPONSE ACTIVITIES

3.1 Soil Excavation Activities

On December 20, 2014, Enterprise was informed that the Potash 1003 relief valve had activated, creating an area of impact (spray area) north of the relief valve. Approximately eight (8) bbls of pipeline liquid was released from the pipeline at the relief valve.

Initial remediation activities were conducted on December 22, 2014. The Site was scraped utilizing heavy equipment, provided by Willbros Construction (Willbros), to remove surface soils affected by the overspray starting from the release point at the relief valve to the areas immediately north of the point of impact. The scraped area measures approximately 300 feet long by 100 feet wide. Scraped soils were stockpiled on Site, for future transport and disposal by Willbros in accordance with local, state and federal regulations.

On January 29, 2015, the spray area was treated by applying a microbial-decomposition product (Microblaze®) to introduce additional nonpathogenic bacterial strains designed to metabolize petroleum hydrocarbons. Talon/LPE (Talon) provided the equipment and labor for the Microblaze application.

The surface soils at the Site were returned to approximate original grade.

3.2 Sampling Program

On March 25, 2015, Apex collected three (3) composite confirmation soil samples (CS-1, CS-2 and CS-3) from within the spray area. Due to the size of the spray area, the area was divided into three (3) separate grid areas. Composite samples were collected from the surface every 100 foot interval within the spray area. One (1) composite soil sample was also collected from the stockpiled soils (STP).

Soil samples were collected and delivered under chain of custody control to Trace Analysis laboratory in Midland, Texas for analysis of BTEX utilizing EPA SW-846 Method #8021B, TPH, gasoline range organics (GRO) and diesel range organics (DRO) utilizing EPA SW-846 Method #8015 and chlorides utilizing EPA Method SM 4500-Cl B.

Executed chain-of-custody form and laboratory data sheets are provided in Appendix D. All samples were analyzed within specified holding times.

Figure 3 is a Sample Location map that indicates the approximate location of the confirmation soil samples in relation to pertinent land features and general excavation boundaries (Appendix A).

4.0 RESULTS

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to condensate releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically NMAC 19.15.30 *Remediation*. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

4.1 Excavation Confirmation Samples

Apex compared the BTEX and TPH concentrations, or sample detection limits (SDLs), associated with the soil samples collected from the Site to the OCD Recommended Remediation Action Levels (RRALs) for sites having a total ranking score of 0.

Laboratory analyses of the composite confirmation soil samples (CS-1, CS-2 and CS-3) did not indicate BTEX concentrations above the laboratory SDLs, which are below the RRALs. All composite confirmation soil samples are below the OCD RRAL of 50 mg/Kg for a Site ranking of 0.

Laboratory analyses of the composite confirmation soil samples (CS-1, CS-2 and CS-3) indicated TPH GRO/DRO concentrations ranging from 293 mg/Kg to 1,550 mg/Kg. The detected concentrations are below the OCD RRAL of 5,000 mg/Kg for TPH GRO/DRO for a Site ranking of 0.

Laboratory analyses of the composite confirmation soil samples (CS-1, CS-2 and CS-3) did not indicate chloride concentrations above the laboratory SDLs, which are below the RRALS. All composite confirmation samples are below the OCD RRAL limits for a site ranking of 0.

4.1 Excavation Confirmation Samples

Laboratory analyses of the stockpile confirmation soil sample (STP) did not indicate BTEX concentrations above the RRALs. The stockpile confirmation sample indicated TPH GRO/DRO concentrations ranging from less than 4.00 mg/Kg to 188 mg/Kg. The stockpile confirmation sample indicated a chloride concentration of 563 mg/Kg. The stockpile confirmation soil sample (STP) is below the OCD RRAL limits for a Site ranking of 0.

Confirmation sample results are provided in Table 1 in Appendix B.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The 1003 Potash relief valve is located within the Enterprise pipeline right-of-way (ROW) in the northeast (NE) ¼ of the northeast (NE) ¼ of Section 35 in Township 24 South and Range 28 East in Eddy County, New Mexico, (32.180456, -104.051333) referred to hereinafter as the "Site". The Site is located on property consisting of native vegetation range land periodically interrupted by oil and gas gathering facilities including the Enterprise Potash 1003 natural gas gathering pipeline, which traverses the area northwest to southeast.

On March 25, 2015, Apex collected three (3) composite confirmation soil samples (CS-1, CS-2 and CS-3) from locations within the spray area. Composite samples were taken at the surface. Based upon the laboratory results no further field activities were performed.

- The primary objective of the corrective action was to reduce the concentration of COC's in the on-Site soils to below the New Mexico EMNRD OCD R*RALs* using the New Mexico EMNRD OCD'S *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

- The spray area north of the relief valve was scraped utilizing heavy equipment to remove surface soils affected by the overspray starting from the release point at the relief valve to the areas north of the point of impact. The spray area was subsequently treated with a

Microblaze solution. The surface impact of the spray area is approximately 300 feet long by 100 feet wide.

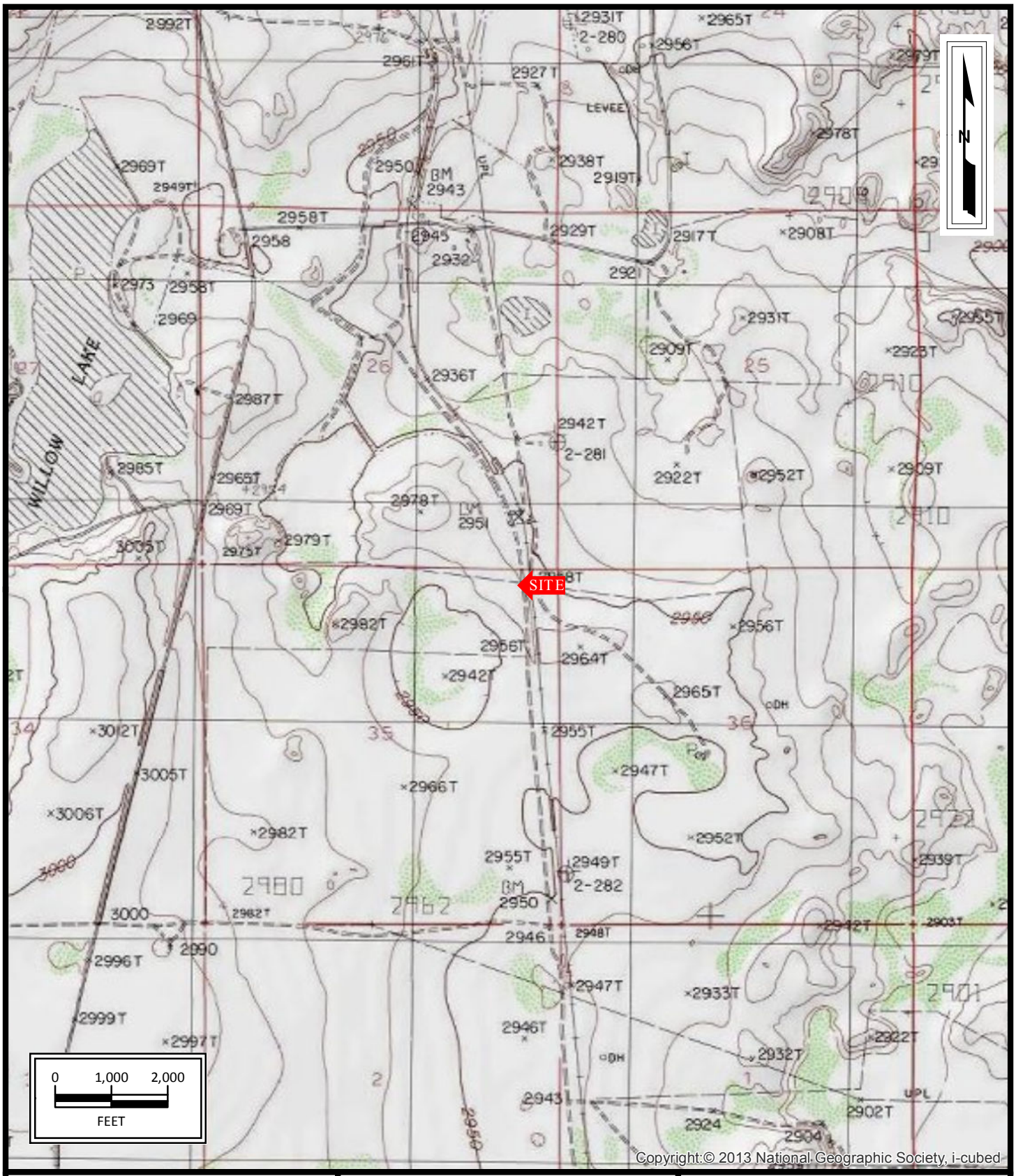
- The surface soils at the Site were returned to approximate original grade.

- Three (3) composite confirmation soil samples were collected from the spray area for laboratory analyses. Based on analytical results, the soils remaining in place did not indicate total benzene, BTEX, TPH GRO/DRO and chloride concentrations above the applicable OCD RRALs of 10 mg/Kg, 50 mg/Kg,5,000 mg/Kg and 1,000 mg/Kg, respectively for the Site Total Ranking Score of 0.

Based on completed on-Site response actions and laboratory analytical results, no additional investigation and/or remediation appears warranted at this time.

APPENDIX A

Figures



1003 Potash Relief Valve
Eddy County, New Mexico
32.180456N, 104.051333W

Project No. 7030714G118

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FIGURE 1
Topographic Map

1003 Potash Relief Valve
Eddy County, New Mexico
32.180456N, 104.051333W

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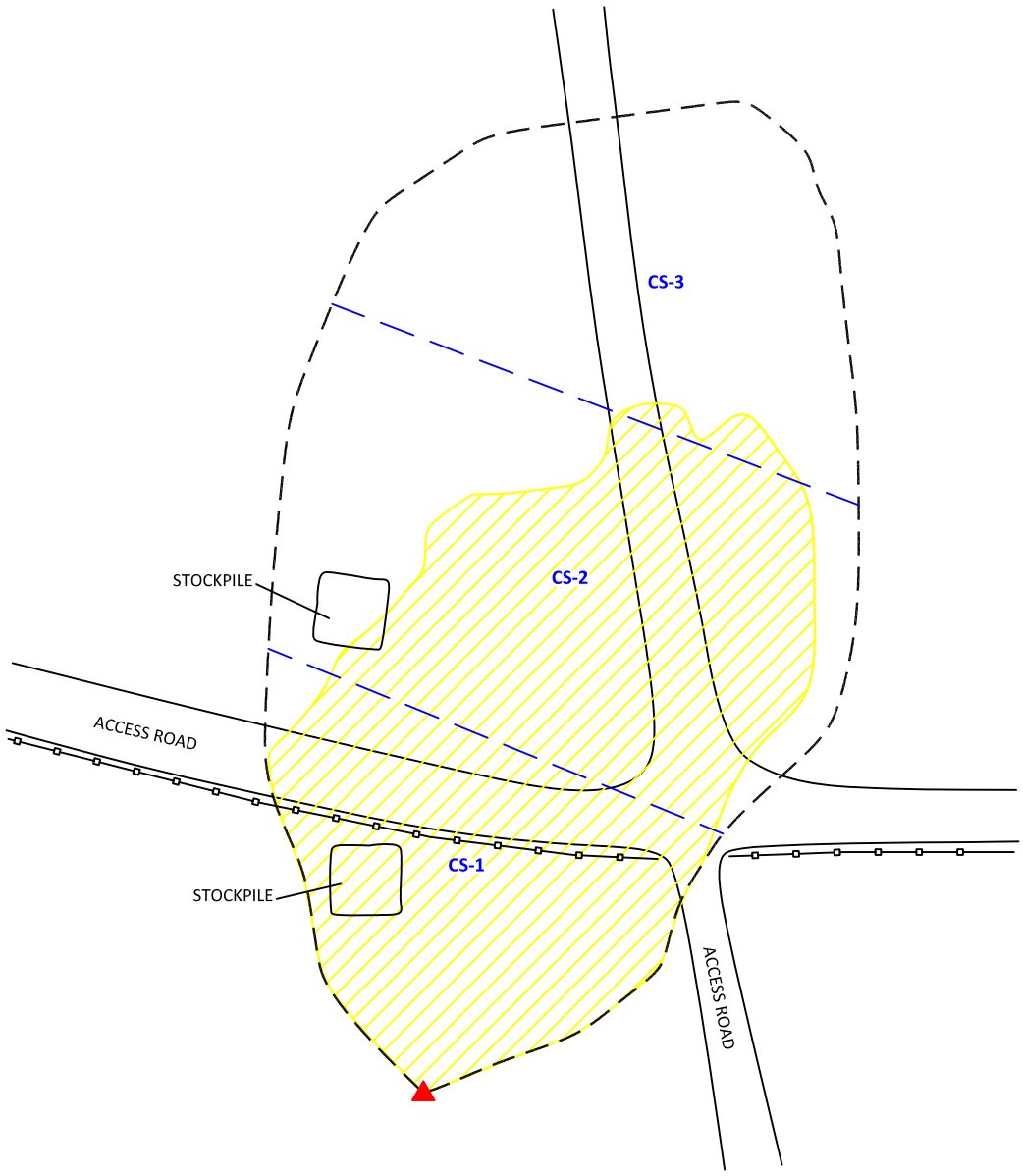
FIGURE 2
Site Vicinity Map



LEGEND:

CS-1	CONFIRMATION SAMPLE AREA
- - - -	OVERSPRAY OF VEGETATION
	AREA HAS BEEN SCRAPED/BACKDRAGGED
▲	RELIEF VALVE/RELEASE POINT
—□—	FENCE

0 20 40

1" = 40'

1003 Potash Relief Valve
Eddy County, New Mexico
32.180456N, 103.051333W

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FIGURE 3
Site Plan

Z:\Houston South\Drafting\Midland 07\2014\7030714G118\Figure 3.dwg 04/29/15

APPENDIX B

Analytical Tables

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS

1003 Potash Relief Valve

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	BTEX (mg/Kg)	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)	TPH GRO/DRO (mg/Kg)	Chlorides (mg/Kg)
New Mexico Oil Conservation Division (NMOCD) Recomended Remediation Action Levels (RRALs) (Total Ranking Score: 0)											
New Mexico Oil Conservation Division (NMOCD) Recomended Remediation Action Level			**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**5,000**	**1,000**
CS-1	3/25/2015	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	**4.65**	**642**	**649**	<20.0
CS-2	3/25/2015	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	**293**	**293**	<20.0
CS-3	3/25/2015	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	**1,550**	**1,550**	<20.0
STOCKPILE SAMPLE ANALYTICAL RESULTS											
STP	3/25/2015	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	**188**	448	**563**

mg/Kg- milligrams per Kilograms

NE: Not Established

NA: Not applicable

APPENDIX C

Laboratory Analytical Reports & Chain-of-Custody Documentation

Summary Report

(Corrected Report)

Karolanne Toby
APEX/Titan
2351 W. Northwest Hwy.
Suite 3321
Dallas, Tx 75220

Report Date: April 9, 2015

Work Order: 15032604

Project Location: Midland, TX
Project Name: 1003 Potash Relief Valve
Project Number: 7030714G118.001

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
389705	CS-1	soil	2015-03-25	15:02	2015-03-26
389706	CS-2	soil	2015-03-25	15:08	2015-03-26
389707	CS-3	soil	2015-03-25	15:15	2015-03-26

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
389705 - CS-1	<0.0200	<0.0200	<0.0200	<0.0200	**642** Qr,Qs	**4.65**
389706 - CS-2	<0.0200	<0.0200	<0.0200	<0.0200	**293** Qr,Qs	<4.00
389707 - CS-3	<0.0200	<0.0200	<0.0200	<0.0200	**1550** Qr,Qs	<4.00

Sample: 389705 - CS-1

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 389706 - CS-2

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 389707 - CS-3

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

(Corrected Report)

Karolanne Toby
APEX/Titan
2351 W. Northwest Hwy.
Suite 3321
Dallas, Tx, 75220

Report Date: April 9, 2015

Work Order: 15032604

Project Location: Midland, TX
Project Name: 1003 Potash Relief Valve
Project Number: 7030714G118.001

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

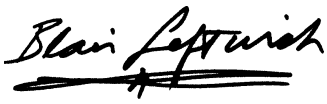
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
389705	CS-1	soil	2015-03-25	15:02	2015-03-26
389706	CS-2	soil	2015-03-25	15:08	2015-03-26
389707	CS-3	soil	2015-03-25	15:15	2015-03-26

Report Corrections (Work Order 15032604)

- 4/9/15: Reissued with TPH DRO results.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 22 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project 1003 Potash Relief Valve were received by TraceAnalysis, Inc. on 2015-03-26 and assigned to work order 15032604. Samples for work order 15032604 were received intact at a temperature of 3.4 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	101767	2015-03-26 at 08:36	120317	2015-03-27 at 07:20
Chloride (Titration)	SM 4500-Cl B	101808	2015-03-27 at 10:25	120331	2015-03-27 at 10:26
TPH DRO - NEW	S 8015 D	101890	2015-03-31 at 16:05	120622	2015-04-09 at 12:13
TPH GRO	S 8015 D	101767	2015-03-26 at 08:36	120318	2015-03-27 at 07:28

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15032604 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 389705 - CS-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	70 - 130

Sample: 389705 - CS-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120331	Date Analyzed:	2015-03-27	Analyzed By:	EM
Prep Batch:	101808	Sample Preparation:	2015-03-27	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 389705 - CS-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120622	Date Analyzed:	2015-04-09	Analyzed By:	SC
Prep Batch:	101890	Sample Preparation:	2015-03-31	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,Qs	1	**642**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr Qsr		138	mg/Kg	1	100	138	70 - 130

Sample: 389705 - CS-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**4.65**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Sample: 389706 - CS-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	70 - 130

Sample: 389706 - CS-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120331	Date Analyzed:	2015-03-27	Analyzed By:	EM
Prep Batch:	101808	Sample Preparation:	2015-03-27	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 389706 - CS-2

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120622	Date Analyzed:	2015-04-09	Analyzed By:	SC
Prep Batch:	101890	Sample Preparation:	2015-03-31	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,Qs	1	**293**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		133	mg/Kg	1	100	133	70 - 130

Sample: 389706 - CS-2

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	70 - 130

Sample: 389707 - CS-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			2.07	mg/Kg	1	2.00	104	70 - 130

Sample: 389707 - CS-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120331	Date Analyzed:	2015-03-27	Analyzed By:	EM
Prep Batch:	101808	Sample Preparation:	2015-03-27	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 389707 - CS-3

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120622	Date Analyzed:	2015-04-09	Analyzed By:	SC
Prep Batch:	101890	Sample Preparation:	2015-03-31	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,Qs	1	**1550**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	209	mg/Kg	1	100	209	70 - 130

Sample: 389707 - CS-3

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	70 - 130

Method Blanks

Method Blank (1) QC Batch: 120317

QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	QC Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00533	mg/Kg	0.02
Toluene		1	<0.00645	mg/Kg	0.02
Ethylbenzene		1	<0.0116	mg/Kg	0.02
Xylene		1	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	70 - 130

Method Blank (1) QC Batch: 120318

QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	QC Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 120331

QC Batch:	120331	Date Analyzed:	2015-03-27	Analyzed By:	EM
Prep Batch:	101808	QC Preparation:	2015-03-27	Prepared By:	EM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 120622

QC Batch:	120622	Date Analyzed:	2015-04-09	Analyzed By:	SC
Prep Batch:	101890	QC Preparation:	2015-03-31	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			89.2	mg/Kg	1	100	89	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.03	mg/Kg	1	2.00	<0.00533	102	70 - 130
Toluene		1	1.97	mg/Kg	1	2.00	<0.00645	98	70 - 130
Ethylbenzene		1	1.97	mg/Kg	1	2.00	<0.0116	98	70 - 130
Xylene		1	6.05	mg/Kg	1	6.00	<0.00874	101	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.97	mg/Kg	1	2.00	<0.00533	98	70 - 130	3	20
Toluene		1	1.91	mg/Kg	1	2.00	<0.00645	96	70 - 130	3	20
Ethylbenzene		1	1.91	mg/Kg	1	2.00	<0.0116	96	70 - 130	3	20
Xylene		1	5.74	mg/Kg	1	6.00	<0.00874	96	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.80	1.86	mg/Kg	1	2.00	90	93	70 - 130
4-Bromofluorobenzene (4-BFB)	1.96	1.94	mg/Kg	1	2.00	98	97	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120318 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	23.8	mg/Kg	1	20.0	<2.32	119	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	21.0	mg/Kg	1	20.0	<2.32	105	70 - 130	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.92	mg/Kg	1	2.00	96	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.90	1.82	mg/Kg	1	2.00	95	91	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120331 | Date Analyzed: 2015-03-27 | Analyzed By: EM
Prep Batch: 101808 | QC Preparation: 2015-03-27 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2590	mg/Kg	5	2500	<19.2	103	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2590	mg/Kg	5	2500	<19.2	103	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 120622 | Date Analyzed: 2015-04-09 | Analyzed By: SC
Prep Batch: 101890 | QC Preparation: 2015-03-31 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		[1]	228	mg/Kg	1	250	<7.41	91	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[1]	221	mg/Kg	1	250	<7.41	88	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	104	102	mg/Kg	1	100	104	102	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 389397

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[1]	1.54	mg/Kg	1	2.00	<0.00533	77	70 - 130
Toluene		[1]	1.55	mg/Kg	1	2.00	<0.00645	78	70 - 130
Ethylbenzene		[1]	1.66	mg/Kg	1	2.00	<0.0116	83	70 - 130
Xylene		[1]	5.02	mg/Kg	1	6.00	<0.00874	84	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		[1]	1.63	mg/Kg	1	2.00	<0.00533	82	70 - 130	6	20
Toluene		[1]	1.66	mg/Kg	1	2.00	<0.00645	83	70 - 130	7	20
Ethylbenzene		[1]	1.78	mg/Kg	1	2.00	<0.0116	89	70 - 130	7	20
Xylene		[1]	5.30	mg/Kg	1	6.00	<0.00874	88	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.71	1.68	mg/Kg	1	2	86	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	1.97	mg/Kg	1	2	99	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 389397

QC Batch: 120318 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[1]	16.8	mg/Kg	1	20.0	<2.32	84	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	17.3	mg/Kg	1	20.0	<2.32	86	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.82	1.84	mg/Kg	1	2	91	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.99	2.04	mg/Kg	1	2	100	102	70 - 130

Matrix Spike (MS-1) Spiked Sample: 389732

QC Batch: 120331 | Date Analyzed: 2015-03-27 | Analyzed By: EM
Prep Batch: 101808 | QC Preparation: 2015-03-27 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3780	mg/Kg	5	2500	1194	103	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3780	mg/Kg	5	2500	1194	103	78.9 - 121	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 389705

QC Batch: 120622 | Date Analyzed: 2015-04-09 | Analyzed By: SC
Prep Batch: 101890 | QC Preparation: 2015-03-31 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO [Qs]	[Qs]	[1]	677	mg/Kg	1	250	642	14	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qr,Qs	Qr,Qs	1	1040	mg/Kg	1	250	642	159	70 - 130	42	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	120	156	mg/Kg	1	100	120	156	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.104	104	80 - 120	2015-03-27
Toluene		1	mg/kg	0.100	0.101	101	80 - 120	2015-03-27
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2015-03-27
Xylene		1	mg/kg	0.300	0.308	103	80 - 120	2015-03-27

Standard (CCV-2)

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.100	100	80 - 120	2015-03-27
Toluene		1	mg/kg	0.100	0.0969	97	80 - 120	2015-03-27
Ethylbenzene		1	mg/kg	0.100	0.0941	94	80 - 120	2015-03-27
Xylene		1	mg/kg	0.300	0.284	95	80 - 120	2015-03-27

Standard (CCV-3)

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0971	97	80 - 120	2015-03-27
Toluene		1	mg/kg	0.100	0.0933	93	80 - 120	2015-03-27
Ethylbenzene		1	mg/kg	0.100	0.0894	89	80 - 120	2015-03-27
Xylene		1	mg/kg	0.300	0.270	90	80 - 120	2015-03-27

Standard (CCV-1)

QC Batch: 120318 Date Analyzed: 2015-03-27 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.20	120	80 - 120	2015-03-27

Standard (CCV-2)

QC Batch: 120318 Date Analyzed: 2015-03-27 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.04	104	80 - 120	2015-03-27

Standard (CCV-3)

QC Batch: 120318 Date Analyzed: 2015-03-27 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.10	110	80 - 120	2015-03-27

Standard (ICV-1)

QC Batch: 120331 Date Analyzed: 2015-03-27 Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-27

Standard (CCV-1)

QC Batch: 120331 Date Analyzed: 2015-03-27 Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-27

Standard (CCV-1)

QC Batch: 120622 Date Analyzed: 2015-04-09 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	224	90	80 - 120	2015-04-09

Standard (CCV-2)

QC Batch: 120622 Date Analyzed: 2015-04-09 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2015-04-09

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-14-8	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

WO#: 15032604

CHAIN OF CUSTODY RECORD

APEX

Office Location: Midland TX

Project Manager: [illegible]

Laboratory: Trace Analysis
Address:
Contact:
Phone:
PO/SO #:

Sampler's Name: Travis Turner
Sampler's Signature: [signature]

Proj. No.: 7030714G118.001
Project Name: 1003 Potash Relief Valve
No/Type of Containers: 3

Lab use only
Due Date: 3.4
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Page ____ of ____

ANALYSIS REQUESTED: BTEX 8021B; TPH GRO/DRO; Chlorides

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	BTEX 8021B	TPH GRO/DRO	Chlorides	Lab Sample ID (Lab Use Only)
S	3/25/15	1502	X	●	CS-1						X		X	X	X	389705
↓	↓	1508	↓		CS-2						↓		↓	↓	↓	389706
↓	↓	1515	↓		CS-3						↓		↓	↓	↓	389707

TT 3/25

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	3/26/15	833	[signature]	3/26	8:33

NOTES:

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other ____

Summary Report

Karolanne Toby
APEX/Titan
2351 W. Northwest Hwy.
Suite 3321
Dallas, Tx 75220

Report Date: April 9, 2015

Work Order: 15032603

Project Location: Midland, TX
Project Name: 1003 Potash Relief Valve
Project Number: 7030714G118.001

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
389702	STP	soil	2015-03-25	15:20	2015-03-26

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
389702 - STP	<0.0200	<0.0200	<0.0200	<0.0200	**188**	<4.00 Qs

Sample: 389702 - STP

Param	Flag	Result	Units	RL
Chloride		**563**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Karolanne Toby
APEX/Titan
2351 W. Northwest Hwy.
Suite 3321
Dallas, Tx, 75220

Report Date: April 9, 2015

Work Order: 15032603

Project Location: Midland, TX
Project Name: 1003 Potash Relief Valve
Project Number: 7030714G118.001

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

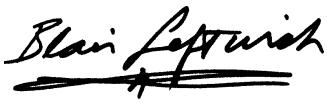
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
389702	STP	soil	2015-03-25	15:20	2015-03-26

Notes

- **Work Order 15032603:** Hold until Notified

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project 1003 Potash Relief Valve were received by TraceAnalysis, Inc. on 2015-03-26 and assigned to work order 15032603. Samples for work order 15032603 were received intact at a temperature of 3.4 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	102019	2015-04-06 at 14:57	120584	2015-04-08 at 09:10
Chloride (Titration)	SM 4500-Cl B	102010	2015-04-06 at 13:46	120549	2015-04-06 at 13:47
TPH DRO - NEW	S 8015 D	102085	2015-04-08 at 22:00	120633	2015-04-09 at 14:58
TPH GRO	S 8015 D	102019	2015-04-06 at 14:57	120585	2015-04-08 at 09:34

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15032603 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 389702 - STP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120584	Date Analyzed:	2015-04-08	Analyzed By:	AK
Prep Batch:	102019	Sample Preparation:	2015-04-06	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	5	<0.0200	mg/Kg	1	0.0200
Xylene	U	5	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.44	mg/Kg	1	2.00	72	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 389702 - STP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120549	Date Analyzed:	2015-04-06	Analyzed By:	EM
Prep Batch:	102010	Sample Preparation:	2015-04-06	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**563**	mg/Kg	5	4.00

Sample: 389702 - STP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120633	Date Analyzed:	2015-04-09	Analyzed By:	SC
Prep Batch:	102085	Sample Preparation:	2015-04-08	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		5	**188**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	70 - 130

Sample: 389702 - STP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120585	Date Analyzed:	2015-04-08	Analyzed By:	AK
Prep Batch:	102019	Sample Preparation:	2015-04-06	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs,U	5	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	70 - 130

Method Blanks

Method Blank (1) QC Batch: 120549

QC Batch:	120549	Date Analyzed:	2015-04-06	Analyzed By:	EM
Prep Batch:	102010	QC Preparation:	2015-04-06	Prepared By:	EM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 120584

QC Batch:	120584	Date Analyzed:	2015-04-08	Analyzed By:	AK
Prep Batch:	102019	QC Preparation:	2015-04-06	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		5	<0.00533	mg/Kg	0.02
Toluene		5	<0.00645	mg/Kg	0.02
Ethylbenzene		5	<0.0116	mg/Kg	0.02
Xylene		5	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	1	2.00	79	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 120585

QC Batch:	120585	Date Analyzed:	2015-04-08	Analyzed By:	AK
Prep Batch:	102019	QC Preparation:	2015-04-06	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		5	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 120633

QC Batch:	120633	Date Analyzed:	2015-04-09	Analyzed By:	SC
Prep Batch:	102085	QC Preparation:	2015-04-08	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		5	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.6	mg/Kg	1	100	99	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 120549 | Date Analyzed: 2015-04-06 | Analyzed By: EM
Prep Batch: 102010 | QC Preparation: 2015-04-06 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	5	2500	<19.2	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2720	mg/Kg	5	2500	<19.2	109	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 120584 | Date Analyzed: 2015-04-08 | Analyzed By: AK
Prep Batch: 102019 | QC Preparation: 2015-04-06 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[5]	1.49	mg/Kg	1	2.00	<0.00533	74	70 - 130
Toluene		[5]	1.50	mg/Kg	1	2.00	<0.00645	75	70 - 130
Ethylbenzene		[5]	1.62	mg/Kg	1	2.00	<0.0116	81	70 - 130
Xylene		[5]	4.87	mg/Kg	1	6.00	<0.00874	81	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		[5]	1.55	mg/Kg	1	2.00	<0.00533	78	70 - 130	4	20
Toluene		[5]	1.58	mg/Kg	1	2.00	<0.00645	79	70 - 130	5	20
Ethylbenzene		[5]	1.65	mg/Kg	1	2.00	<0.0116	82	70 - 130	2	20
Xylene		[5]	5.04	mg/Kg	1	6.00	<0.00874	84	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.43	1.52	mg/Kg	1	2.00	72	76	70 - 130
4-Bromofluorobenzene (4-BFB)	1.89	1.91	mg/Kg	1	2.00	94	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120585 | Date Analyzed: 2015-04-08 | Analyzed By: AK
Prep Batch: 102019 | QC Preparation: 2015-04-06 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[5]	15.3	mg/Kg	1	20.0	<2.32	76	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[5]	15.0	mg/Kg	1	20.0	<2.32	75	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.73	1.68	mg/Kg	1	2.00	86	84	70 - 130
4-Bromofluorobenzene (4-BFB)	2.04	1.99	mg/Kg	1	2.00	102	100	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120633 | Date Analyzed: 2015-04-09 | Analyzed By: SC
Prep Batch: 102085 | QC Preparation: 2015-04-08 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		[5]	232	mg/Kg	1	250	<7.41	93	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[5]	220	mg/Kg	1	250	<7.41	88	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	106	103	mg/Kg	1	100	106	103	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 390357

QC Batch: 120549 | Date Analyzed: 2015-04-06 | Analyzed By: EM
Prep Batch: 102010 | QC Preparation: 2015-04-06 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			13300	mg/Kg	5	2500	10600	108	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			13600	mg/Kg	5	2500	10600	120	78.9 - 121	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 390223

QC Batch: 120584 | Date Analyzed: 2015-04-08 | Analyzed By: AK
Prep Batch: 102019 | QC Preparation: 2015-04-06 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[5]	1.46	mg/Kg	1	2.00	<0.00533	73	70 - 130
Toluene		[5]	1.48	mg/Kg	1	2.00	<0.00645	74	70 - 130
Ethylbenzene		[5]	1.51	mg/Kg	1	2.00	<0.0116	76	70 - 130
Xylene		[5]	4.48	mg/Kg	1	6.00	<0.00874	75	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		[5]	1.54	mg/Kg	1	2.00	<0.00533	77	70 - 130	5	20
Toluene		[5]	1.54	mg/Kg	1	2.00	<0.00645	77	70 - 130	4	20
Ethylbenzene		[5]	1.60	mg/Kg	1	2.00	<0.0116	80	70 - 130	6	20
Xylene		[5]	4.78	mg/Kg	1	6.00	<0.00874	80	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT) Qsr Qsr	1.36	1.45	mg/Kg	1	2	68	72	70 - 130
4-Bromofluorobenzene (4-BFB)	1.89	1.90	mg/Kg	1	2	94	95	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 390223

QC Batch: 120585 | Date Analyzed: 2015-04-08 | Analyzed By: AK
Prep Batch: 102019 | QC Preparation: 2015-04-06 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO Qs	Qs	5	33.1	mg/Kg	5	20.0	23.6	48	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO Qs	Qs	5	31.9	mg/Kg	5	20.0	23.6	42	70 - 130	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	8.72	8.65	mg/Kg	5	10	87	86	70 - 130
4-Bromofluorobenzene (4-BFB)	9.91	9.72	mg/Kg	5	10	99	97	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 390086

QC Batch: 120633 | Date Analyzed: 2015-04-09 | Analyzed By: SC
Prep Batch: 102085 | QC Preparation: 2015-04-08 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	194	mg/Kg	1	250	<7.41	78	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[5]	206	mg/Kg	1	250	<7.41	82	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	87.2	101	mg/Kg	1	100	87	101	70 - 130

Calibration Standards

Standard (ICV-1)

QC Batch: 120549 | Date Analyzed: 2015-04-06 | Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-04-06

Standard (CCV-1)

QC Batch: 120549 | Date Analyzed: 2015-04-06 | Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-04-06

Standard (CCV-1)

QC Batch: 120584 | Date Analyzed: 2015-04-08 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		5	mg/kg	0.100	0.0921	92	80 - 120	2015-04-08
Toluene		5	mg/kg	0.100	0.0887	89	80 - 120	2015-04-08
Ethylbenzene		5	mg/kg	0.100	0.0884	88	80 - 120	2015-04-08
Xylene		5	mg/kg	0.300	0.265	88	80 - 120	2015-04-08

Standard (CCV-2)

QC Batch: 120584 | Date Analyzed: 2015-04-08 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		5	mg/kg	0.100	0.0903	90	80 - 120	2015-04-08
Toluene		5	mg/kg	0.100	0.0847	85	80 - 120	2015-04-08
Ethylbenzene		5	mg/kg	0.100	0.0814	81	80 - 120	2015-04-08
Xylene		5	mg/kg	0.300	0.247	82	80 - 120	2015-04-08

Standard (CCV-1)

QC Batch: 120585 Date Analyzed: 2015-04-08 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	1.13	113	80 - 120	2015-04-08

Standard (CCV-2)

QC Batch: 120585 Date Analyzed: 2015-04-08 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	1.00	100	80 - 120	2015-04-08

Standard (CCV-1)

QC Batch: 120633 Date Analyzed: 2015-04-09 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	224	90	80 - 120	2015-04-09

Standard (CCV-2)

QC Batch: 120633 Date Analyzed: 2015-04-09 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	238	95	80 - 120	2015-04-09

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	PJLA	L14-93	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	LELAP	LELAP-02003	Lubbock
4	NELAP	T104704219-15-11	Lubbock
5	NELAP	T104704392-14-8	Midland
6		2014-018	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.

F	Description
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

WO#: 15032603

CHAIN OF CUSTODY RECORD

APEX

Office Location Midland TX

Project Manager Kardanne Tuby

Laboratory: Trace Analysis

Address:

Contact:

Phone:

PO/SO #:

Lab use only
Due Date: 3.4

Temp. of coolers when received (C°):

1	2	3	4	5

Page ____ of ____

Sampler's Name: Travis Turner

Sampler's Signature:

Proj. No.: 703074GB18.001

Project Name: 1003 Potash Relief Valve

No/Type of Containers: 3

ANALYSIS REQUESTED: BTEX 8021B; TPH 1RO/DRO; Chlorides

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	3/25/15	1520	X		STP						X		389702
↓	↓	1526		X	Bkg-1						↓		389703
↓	↓	1532		X	Bkg-2						↓		389704

LT 3/25

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/25/15	833	Valley	3/26	8:53
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: Hold until notified

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other ____

WO#: 15032603

CHAIN OF CUSTODY RECORD

APEX

Office Location: Midland TX

Project Manager: Kandanne Tuby

Laboratory: Trace Analysis

Address:

Contact:

Phone:

PO/SO #:

Lab use only
Due Date: 3.4

Temp. of coolers when received (C°):

1	2	3	4	5

Page ____ of ____

Sampler's Name: Travis Turner

Sampler's Signature:

Proj. No.: 703071461118.001

Project Name: 1003 Potash Relief Valve

No/Type of Containers: 3

ANALYSIS REQUESTED: BTEX 8021B; TPH 418.1/DRO; Chlorides

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	3/25/15	1520	X		STP						X		389702
↓	↓	1526		X	Bkg-1						↓		389703
↓	↓	1532		X	Bkg-2						↓		389704

X X X — Add: per Sheryl S. 4/3/15 ②

TT 3/25

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/26/15	833	Valley	3/26	8:33
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: Hold until notified

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other ____

AJ

APPENDIX D

NMOCD C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

fABI501227053
NABI501227217

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **Enterprise Field Services LLC**	Contact **Dina Babinski**
Address **PO Box 4324, Houston TX 77252**	Telephone No. **210-528-3824**
Facility Name **Pipeline ROW, 1003 Gathering Lateral**	Facility Type **Gas Gathering Pipeline**

Surface Owner **Private Owner**	Mineral Owner **NA - Pipeline**	API No. **NA**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	**36**	**24S**	**28E**	**591**	**North**	**427**	**East**	**Eddy**

Latitude *N 32.17956* Longitude *W -104.04650*

NATURE OF RELEASE

Type of Release **Liquid Overspray**	Volume of Release **8 BBL**	Volume Recovered **NA**
Source of Release **Pipeline Relief Valve**	Date and Hour of Occurrence **12/19/2014 @ 7:00 MST**	Date and Hour of Discovery **12/20/2014 @ 12:20 MST**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 09 2015
RECEIVED

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The pipeline relief valve activated and sprayed liquid over the surrounding area. No pipeline or valve damage occurred, so no repair activities were necessary.

Describe Area Affected and Cleanup Action Taken.*

Oversprayed areas will be treated with microblaze or other in-situ techniques. Excavation will be performed on areas where liquids penetrated the ground. Soil sampling will be performed to confirm that remediation actions meet NMOCD remediation levels, and will follow-up with a final C-141 form.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION
Printed Name: *Ivan Zirbes*	Approved by Signed By
Title: *Sr. Director, Environmental*	Approval Date: 1/12/15 Expiration Date: N/A
E-mail Address: *snolan@eprod.com*	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 2/12/15 Attached ☐
Date: 1/5/15 Phone: *713-381-6595*	

* Attach Additional Sheets If Necessary

2RP-2721

Enterprise Products

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

January 5, 2015

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 09 2015
RECEIVED

7014 2120 0001 5336 8667
Return Receipt Requested

Mr. Mike Bratcher
New Mexico Oil Conservation Division
District 2 Office
811 South First Street
Artesia, New Mexico 88210

RE: Form C-141 Report for Enterprise Field Services LLC
Releases on Carlsbad Area Gathering Lines

Dear Mr. Bratcher:

Enclosed, please find the required C-141 Form for the pipeline liquid release on our 1003 Line in Eddy County on December 19, 2014. The pipeline relief valve activated and sprayed liquid over the surrounding area. Remediation activities are currently being performed, and a final C-141 form will be submitted when soil sampling results demonstrate that cleanup is satisfactory. This report is sent pursuant to NMAC 19.15.29 requirements for minor releases.

If you have any questions or need additional information, please contact Dina Babinski, our area Environmental Supervisor by phone at 210-528-3824 or via email at djbabinski@eprod.com or Jon Fields, Director of Field Environmental at 713-318-6684.

Regards,

Ivan Zirbes
Sr. Director, Environmental

/bjm
Attachment

P. O. BOX 4324
HOUSTON, TX 77210-4324
713.381.6500

1100 LOUISIANA STREET
HOUSTON, TX 77002-5227
www.enterpriseproducts.com

APPENDIX E

Waste Disposal Tickets

LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257 Sotelo's

NON-HAZARDOUS WASTE MANIFEST NO 108704 | 1. PAGE ___ OF ___ | 2. TRAILER NO. 28.

GENERATOR

3. COMPANY NAME	4. ADDRESS	5. PICK-UP DATE
Enterprise Products	2162 Commerce	5/19/2015
PHONE NO. (432) 230-1414	CITY Midland STATE TX ZIP 79703	6. TNRCC I.D. NO.

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
Non-Regulated, Non-Hazardous Waste					
a.					
b.					
c. WT:					
d. 45,120.					

12. COMMENTS OR SPECIAL INSTRUCTIONS:	13. WASTE PROFILE NO.
1003 RELIEF VALVE	708582

TRANSPORTER

14. **IN CASE OF EMERGENCY OR SPILL, CONTACT**

NAME Kin Slaughter PHONE NO 575-887-4048 24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME | SIGNATURE | DATE

TRANSPORTERS

16. TRANSPORTER (1)	17. TRANSPORTER (2)
NAME: SOTELO'S TRUCKING	NAME:
TEXAS I.D. NO.	TEXAS I.D. NO.
IN CASE OF EMERGENCY CONTACT: JOSE SOTELO	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE: (575) 706-3842	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	19. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME Micheal Nowlin	PRINTED/TYPED NAME
SIGNATURE DATE 5/19/2015	SIGNATURE DATE

DISPOSAL FACILITY

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE	CELL NO.	DATE 5/19/2015	TIME 2:40
Donna Jowino			

GENERATOR: COPIES 1 & 6 DISPOSAL SITE: COPIES 2 & 3 TRANSPORTERS: COPIES 4 & 5

COPY 1

LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257 Sotelo's

NON-HAZARDOUS WASTE MANIFEST NO 108705 | 1. PAGE ___ OF ___ | 2. TRAILER NO. #10.

GENERATOR

3. COMPANY NAME	4. ADDRESS	5. PICK-UP DATE
Enterprise Products	2162 Commerce	5/19/2015
PHONE NO. (432) 230-1414	CITY M'dland STATE TX ZIP 79703	6. TNRCC I.D. NO.

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
~~Non Regulated, Non Hazardous Waste~~		CM			
a.					
b.					
c. WT					
d. 42,140					

12. COMMENTS OR SPECIAL INSTRUCTIONS:	13. WASTE PROFILE NO.
1003 RELIEF VAL E	708582

TREATOR

14. **IN CASE OF EMERGENCY OR SPILL, CONTACT**

NAME	PHONE NO	24-HOUR EMERGENCY NO.
Kin Slaughter	575-887-4048	

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME	SIGNATURE	DATE

TRANSPORTERS

16. **TRANSPORTER (1)**	17. **TRANSPORTER (2)**
NAME: SOTELO'S TRUCKING	NAME:
TEXAS I.D. NO.	TEXAS I.D. NO.
IN CASE OF EMERGENCY CONTACT: JOSE SOTELO	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE: (575) 706-3842	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	19. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME X Jose Sotelo	PRINTED/TYPED NAME
SIGNATURE X [signature] DATE 5/19/2015	SIGNATURE DATE

DISPOSAL FACILITY

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE	CELL NO.	DATE 5/19/2015	TIME 3:05
Donna Ingram			

GENERATOR: COPIES 1 & 6 DISPOSAL SITE: COPIES 2 & 3 TRANSPORTERS: COPIES 4 & 5

COPY 1

LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

Sotelo's.

NON-HAZARDOUS WASTE MANIFEST NO 108707 | 1. PAGE ___ OF ___ | 2. TRAILER NO. 10

GENERATOR

3. COMPANY NAME	4. ADDRESS	5. PICK-UP DATE
Enterprise Products	2162 Commerce	5/20/2015
PHONE NO. (432) 230-1414	CITY Midland STATE TX ZIP 79703	6. TNRCC I.D. NO.

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	8. CONTAINERS Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
a. Non-Regulated Non Hazardous Waste	1	CM			
b.					
c.					
d. WT: 43360					

12. COMMENTS OR SPECIAL INSTRUCTIONS: 1003 RELIEF VALVE

13. WASTE PROFILE NO. 708582

14. **IN CASE OF EMERGENCY OR SPILL, CONTACT**

NAME: Kim Slaughter | PHONE NO: 575-887-4048 | 24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME | SIGNATURE | DATE

TRANSPORTERS

16. TRANSPORTER (1)	17. TRANSPORTER (2)
NAME: SOTELO'S TRUCKING	NAME:
TEXAS I.D. NO.	TEXAS I.D. NO.
IN CASE OF EMERGENCY CONTACT: JOSE SOTELO	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE: (575) 706-3842	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	19. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME *Michael Nowlin	PRINTED/TYPED NAME
SIGNATURE *Michael Nowlin DATE 5/20/2015	SIGNATURE DATE

DISPOSAL FACILITY

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE	CELL NO.	DATE	TIME
Donna Garcia		5/20/2015	8:00

GENERATOR: COPIES 1 & 6 | DISPOSAL SITE: COPIES 2 & 3 | TRANSPORTERS: COPIES 4 & 5

COPY 1

LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257 Sotelos #

NON-HAZARDOUS WASTE MANIFEST NO 108714 | 1. PAGE ___ OF ___ | 2. TRAILER NO. 28.

GENERATOR

3. COMPANY NAME	4. ADDRESS	5. PICK-UP DATE
Enterprise Products	2162 Commerce	5/20/2015
PHONE NO. 432 230-1414	CITY Midland STATE TX ZIP 79703	6. TNRCC I.D. NO.

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
~~Non-Regulated, Non-Hazardous Waste~~					
a.					
b.					
c. WT					
d. 43400.					

12. COMMENTS OR SPECIAL INSTRUCTIONS:	13. WASTE PROFILE NO.
1003 RELIEF VALVE	708582

14. **IN CASE OF EMERGENCY OR SPILL, CONTACT**

NAME Kin Slaughter | PHONE NO 575-887-4048 | 24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME | SIGNATURE | DATE

TRANSPORTERS

16. TRANSPORTER (1)	17. TRANSPORTER (2)
NAME: SOTELO'S TRUCKING	NAME:
TEXAS I.D. NO.	TEXAS I.D. NO.
IN CASE OF EMERGENCY CONTACT: JOSE SOTELO	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE: (575) 706-3842	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	19. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME Jose Sotelo Sr	PRINTED/TYPED NAME
SIGNATURE	DATE 5/20/2015	SIGNATURE	DATE

DISPOSAL FACILITY

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE	CELL NO.	DATE 5/20/2015	TIME 11:00
Donna Nolino			

GENERATOR: COPIES 1 & 6 | DISPOSAL SITE: COPIES 2 & 3 | TRANSPORTERS: COPIES 4 & 5

COPY 1