

Analytical Report 567704

for Tetra Tech- Midland

Project Manager: Ike Tavarez
Rusty Anchor 7 Federal Com 1H
212C-MD-01014
15-NOV-17

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco-Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





15-NOV-17

Project Manager: **Ike Tavarez Tetra Tech- Midland**4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): 567704

Rusty Anchor 7 Federal Com 1H Project Address: Lea Co, NM

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 567704. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 567704 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Mike Kimmel

Client Services Manager

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Sample Cross Reference 567704



Tetra Tech- Midland, Midland, TX

Rusty Anchor 7 Federal Com 1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench #1 (0-1') 2-3 BEB	S	11-01-17 00:00		567704-001
Trench #1 (1') 2-3 BEB	S	11-01-17 00:00		567704-002
Trench #1 (2') 2-3 BEB	S	11-01-17 00:00		567704-003
Trench #1 (4') 2-3 BEB	S	11-01-17 00:00		567704-004
Trench #1 (6') 2-3 BEB	S	11-01-17 00:00		567704-005
Trench #1 (8') 2-3 BEB	S	11-01-17 00:00		567704-006
Trench #1 (10') 2-3 BEB	S	11-01-17 00:00		567704-007
Trench #2 (0-1') 2-3 BEB	S	11-01-17 00:00		567704-008
Trench #2 (1') 2-3 BEB	S	11-01-17 00:00		567704-009
Trench #2 (2') 2-3 BEB	S	11-01-17 00:00		567704-010
Trench #2 (4') 2-3 BEB	S	11-01-17 00:00		567704-011
Trench #2 (6') 2-3 BEB	S	11-01-17 00:00		567704-012
Trench #2 (8') 2-3 BEB	S	11-01-17 00:00		567704-013
Trench #2 (10') 2-3 BEB	S	11-01-17 00:00		567704-014
Trench #3 (0-1') 2-3 BEB	S	11-01-17 00:00		567704-015
Trench #3 (1') 2-3 BEB	S	11-01-17 00:00		567704-016
Trench #3 (2') 2-3 BEB	S	11-01-17 00:00		567704-017
Trench #3 (4') 2-3 BEB	S	11-01-17 00:00		567704-018
Trench #3 (6') 2-3 BEB	S	11-01-17 00:00		567704-019
Trench #3 (8') 2-3 BEB	S	11-01-17 00:00		567704-020
Trench #3 (10') 2-3 BEB	S	11-01-17 00:00		567704-021
Background #1 (0-1')	S	11-01-17 00:00		567704-022
Background #1 (1')	S	11-01-17 00:00		567704-023
Background #1 (2')	S	11-01-17 00:00		567704-024
Background #1 (3')	S	11-01-17 00:00		567704-025



CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Rusty Anchor 7 Federal Com 1H

 Project ID:
 212C-MD-01014
 Report Date:
 15-NOV-17

 Work Order Number(s):
 567704
 Date Received:
 11/07/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3032688 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3032942 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3033077 Inorganic Anions by EPA 300/300.1

Lab Sample ID 567704-020 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 567704-013, -014, -015, -016, -017, -018, -019, -020, -021, -022, -023, -024, -025.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Tetra Tech- Midland, Midland, TX

Project Name: Rusty Anchor 7 Federal Com 1H

TNI TABORATOR

Project Id: 212C-MD-01014

Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Tue Nov-07-17 03:56 pm

Report Date: 15-NOV-17 **Project Manager:** Kelsey Brooks

	Lab Id:	567704-0	001	567704-0	02	567704-0	03	567704-0	004	567704-0	05	567704-0	06
	Field Id:	Trench #1 (0-1')	2-3 BEB	Trench #1 (1') 2	-3 BEB	Trench #1 (2') 2	2-3 BEB	Trench #1 (4')	2-3 BEB	Trench #1 (6') 2	2-3 BEB	Trench #1 (8') 2	2-3 BEB
Analysis Requested	Depth:												
	Matrix:	SOIL	,	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-01-17	00:00	Nov-01-17 (00:00	Nov-01-17 (00:00	Nov-01-17	00:00	Nov-01-17 (00:00	Nov-01-17 (00:00
BTEX by EPA 8021B	Extracted:	Nov-08-17	08:00										
	Analyzed:	Nov-08-17	13:20										
	Units/RL:	mg/kg	RL										
Benzene		< 0.00199	0.00199										
Toluene		< 0.00199	0.00199										
Ethylbenzene		< 0.00199	0.00199										
m,p-Xylenes		< 0.00398	0.00398										
o-Xylene		< 0.00199	0.00199										
Total Xylenes		< 0.00199	0.00199										
Total BTEX		< 0.00199	0.00199										
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-10-17	13:00	Nov-10-17 1	3:00	Nov-10-17	13:00	Nov-10-17	13:00	Nov-10-17	3:00	Nov-10-17	13:00
	Analyzed:	Nov-10-17	18:08	Nov-10-17 1	8:14	Nov-10-17	18:20	Nov-10-17	18:46	Nov-10-17	8:52	Nov-10-17	19:11
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		980	24.9	884	25.0	1290	24.9	1900	49.5	578	25.0	803	24.6
TPH by Texas1005	Extracted:	Nov-08-17	15:00										
	Analyzed:	Nov-09-17	00:31										
	Units/RL:	mg/kg	RL										
C6-C12 Range Hydrocarbons		<25.0	25.0										
C12-C28 Range Hydrocarbons		250	25.0										
C28-C35 Range Hydrocarbons		<25.0	25.0										
Total TPH		250	25.0										

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Version: 1.%



Tetra Tech- Midland, Midland, TX

Project Name: Rusty Anchor 7 Federal Com 1H



Project Id: 212C-MD-01014

Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Tue Nov-07-17 03:56 pm

Report Date: 15-NOV-17 **Project Manager:** Kelsey Brooks

										l			
	Lab Id:	567704-0	007	567704-0	008	567704-0	09	567704-0	010	567704-0	11	567704-0	012
Analysis Requested	Field Id:	Trench #1 (10')	2-3 BEB	Trench #2 (0-1')	2-3 BEB	Trench #2 (1') 2	2-3 BEB	Trench #2 (2') 2	2-3 BEB	Trench #2 (4') 2	2-3 BEB	Trench #2 (6') 2	2-3 BEB
mulysis Requesicu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-01-17	00:00	Nov-01-17	00:00	Nov-01-17 (00:00	Nov-01-17	00:00	Nov-01-17 (00:00	Nov-01-17 (00:00
BTEX by EPA 8021B	Extracted:	Nov-08-17	08:00	Nov-08-17	08:00								
	Analyzed:	Nov-08-17	13:38	Nov-08-17	13:57								
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene	'	< 0.00200	0.00200	< 0.00202	0.00202								
Toluene		< 0.00200	0.00200	< 0.00202	0.00202								
Ethylbenzene		< 0.00200	0.00200	< 0.00202	0.00202								
m,p-Xylenes		< 0.00399	0.00399	< 0.00403	0.00403								
o-Xylene		< 0.00200	0.00200	< 0.00202	0.00202								
Total Xylenes		< 0.00200	0.00200	< 0.00202	0.00202								
Total BTEX		< 0.00200	0.00200	< 0.00202	0.00202								
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-10-17	13:00	Nov-10-17	13:00	Nov-10-17 1	3:00	Nov-10-17	13:00	Nov-10-17	3:00	Nov-10-17	13:00
	Analyzed:	Nov-10-17	19:18	Nov-10-17	19:24	Nov-10-17 1	9:31	Nov-10-17	19:37	Nov-10-17	9:43	Nov-10-17	19:50
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	'	574	4.98	610	4.94	588	4.91	982	4.93	1460	24.7	547	4.91
TPH by Texas1005	Extracted:	Nov-08-17	15:00	Nov-08-17	15:00		İ						
	Analyzed:	Nov-09-17	00:53	Nov-09-17	01:12								
	Units/RL:	mg/kg	RL	mg/kg	RL								
C6-C12 Range Hydrocarbons	'	<25.0	25.0	<25.0	25.0								
C12-C28 Range Hydrocarbons		<25.0	25.0	240	25.0								
C28-C35 Range Hydrocarbons		<25.0	25.0	<25.0	25.0								
Total TPH		<25.0	25.0	240	25.0								

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Version: 1.%



Tetra Tech- Midland, Midland, TX

Project Name: Rusty Anchor 7 Federal Com 1H

TNI CHRONE

Project Id: 212C-MD-01014

Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Tue Nov-07-17 03:56 pm

Report Date: 15-NOV-17 **Project Manager:** Kelsey Brooks

	Lab Id:	567704-0	013	567704-0	014	567704-0)15	567704-0	016	567704-0	17	567704-0	018
	Field Id:	Trench #2 (8') 2	2-3 BEB	Trench #2 (10')	2-3 BEB	Trench #3 (0-1')	2-3 BEB	Trench #3 (1')	2-3 BEB	Trench #3 (2') 2	2-3 BEB	Trench #3 (4') 2	2-3 BEB
Analysis Requested	Depth:									567704-017 Trench #3 (2') 2-3 BEB SOIL Nov-01-17 00:00 Nov-10-17 15:00 Nov-10-17 21:25 mg/kg RL 908 24.6			
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-01-17 (00:00	Nov-01-17	00:00	Nov-01-17	00:00	Nov-01-17	00:00	Nov-01-17 (00:00	Nov-01-17	00:00
BTEX by EPA 8021B	Extracted:			Nov-08-17 (08:00	Nov-08-17 (08:00						
·	Analyzed:			Nov-08-17		Nov-08-17							
	Units/RL:			mg/kg	RL	mg/kg	RL						
Benzene				< 0.00201	0.00201	<0.00202	0.00202						
Toluene				< 0.00201	0.00201	< 0.00202	0.00202						
Ethylbenzene				< 0.00201	0.00201	< 0.00202	0.00202						
m,p-Xylenes				< 0.00402	0.00402	< 0.00404	0.00404						
o-Xylene				< 0.00201	0.00201	< 0.00202	0.00202						
Total Xylenes				< 0.00201	0.00201	< 0.00202	0.00202						
Total BTEX				< 0.00201	0.00201	< 0.00202	0.00202						
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-10-17	15:00	Nov-10-17	15:00	Nov-10-17	15:00	Nov-10-17	15:00	Nov-10-17 1	5:00	Nov-10-17	15:00
	Analyzed:	Nov-10-17	20:47	Nov-10-17	20:53	Nov-10-17	21:00	Nov-10-17	21:06	Nov-10-17 2	21:25	Nov-10-17 2	21:32
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		699	25.0	971	24.9	1360	24.5	1200	24.9	908	24.6	824	24.7
TPH by Texas1005	Extracted:			Nov-08-17	15:00	Nov-08-17	15:00						
	Analyzed:			Nov-09-17	01:33	Nov-09-17	01:54						
	Units/RL:			mg/kg	RL	mg/kg	RL						
C6-C12 Range Hydrocarbons				<24.9	24.9	56.8	25.0						
C12-C28 Range Hydrocarbons				74.8	24.9	639	25.0						
C28-C35 Range Hydrocarbons				<24.9	24.9	55.5	25.0						
Total TPH				74.8	24.9	751	25.0						

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Version: 1.%



Tetra Tech- Midland, Midland, TX

Project Name: Rusty Anchor 7 Federal Com 1H



Project Id: 212C-MD-01014

Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Tue Nov-07-17 03:56 pm

Report Date: 15-NOV-17 **Project Manager:** Kelsey Brooks

	Lab Id:	567704-0	19	567704-0	20	567704-0)21	567704-0	022	567704-0	23	567704-0)24
4 1 2 8 4 1	Field Id:	Trench #3 (6') 2	2-3 BEB	Trench #3 (8') 2	2-3 BEB	Trench #3 (10')	2-3 BEB	Background #	‡ 1 (0-1')	Background #	#1 (1')	Background #	#1 (2')
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-01-17	00:00	Nov-01-17 (00:00	Nov-01-17	00:00	Nov-01-17	00:00	Nov-01-17 (00:00	Nov-01-17 (00:00
BTEX by EPA 8021B	Extracted:					Nov-08-17	08:00	Nov-10-17	07:45				
	Analyzed:					Nov-08-17	18:58	Nov-10-17	10:16				
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						< 0.00200	0.00200	< 0.00201	0.00201				
Toluene						< 0.00200	0.00200	< 0.00201	0.00201				
Ethylbenzene						< 0.00200	0.00200	< 0.00201	0.00201				
m,p-Xylenes						< 0.00399	0.00399	< 0.00402	0.00402				
o-Xylene						< 0.00200	0.00200	< 0.00201	0.00201				
Total Xylenes						< 0.00200	0.00200	< 0.00201	0.00201				
Total BTEX						< 0.00200	0.00200	< 0.00201	0.00201				
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-10-17 15:00		Nov-10-17 15:00		Nov-10-17	15:00	Nov-10-17	15:00	Nov-10-17 15:00		Nov-10-17 15:00	
	Analyzed:	Nov-10-17	21:38	Nov-10-17 2	20:28	Nov-10-17 21:44		Nov-10-17 21:51		Nov-10-17 2	21:57	Nov-10-17 2	22:16
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		923	24.9	517	4.96	785	25.0	233	4.99	30.2	4.98	21.6	4.93
TPH by Texas1005	Extracted:					Nov-08-17	15:00	Nov-08-17	15:00				
	Analyzed:					Nov-09-17	02:14	Nov-09-17	02:35				
	Units/RL:					mg/kg	RL	mg/kg	RL				
C6-C12 Range Hydrocarbons	'					<25.0	25.0	<24.9	24.9				
C12-C28 Range Hydrocarbons						25.6	25.0	<24.9	24.9				
C28-C35 Range Hydrocarbons						<25.0	25.0	<24.9	24.9				
Total TPH						25.6	25.0	<24.9	24.9				

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Version: 1.%



Tetra Tech- Midland, Midland, TX

Project Name: Rusty Anchor 7 Federal Com 1H



Project Id: 212C-MD-01014

Ike Tavarez

Project Location: Lea Co, NM

Contact:

Date Received in Lab: Tue Nov-07-17 03:56 pm

Report Date: 15-NOV-17 **Project Manager:** Kelsey Brooks

	Lab Id:	567704-025			
Analysis Requested	Field Id:	Background #1 (3')			
Anaiysis Requesieu	Depth:				
	Matrix:	SOIL			
	Sampled:	Nov-01-17 00:00			
BTEX by EPA 8021B	Extracted:	Nov-10-17 07:45			
	Analyzed:	Nov-10-17 10:34			
	Units/RL:	mg/kg RL			
Benzene		< 0.00199 0.00199			
Toluene		< 0.00199 0.00199			
Ethylbenzene		<0.00199 0.00199			
-Xylenes		< 0.00398 0.00398			
o-Xylene		<0.00199 0.00199			
Total Xylenes		<0.00199 0.00199			
Total BTEX		<0.00199 0.00199			
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-10-17 15:00			
	Analyzed:	Nov-10-17 22:23			
	Units/RL:	mg/kg RL			
Chloride		366 4.98			
TPH by Texas1005	Extracted:	Nov-08-17 15:00			
	Analyzed:	Nov-09-17 02:56			
	Units/RL:	mg/kg RL			
C6-C12 Range Hydrocarbons		<25.0 25.0			
C12-C28 Range Hydrocarbons		<25.0 25.0			
C28-C35 Range Hydrocarbons		<25.0 25.0			
Total TPH		<25.0 25.0			

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Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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5332 Blackberry Drive, San Antonio TX 78238 (210) 509-3334 (210) 509-3335
1211 W Florida Ave, Midland, TX 79701 (432) 563-1800 (432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282 (602) 437-0330



Form 2 - Surrogate Recoveries

Project Name: Rusty Anchor 7 Federal Com 1H

Project ID: 212C-MD-01014 Work Orders: 567704,

Lab Batch #: 3032688 Matrix: Soil **Sample:** 567704-001 / SMP Batch:

Units:	mg/kg	Date Analyzed: 11/08/17 13:20	SURROGATE RECOVERY STUDY								
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluoroben	izene	Analytes	0.0279	0.0300	93	80-120					
4-Bromofluorob	enzene		0.0286	0.0300	95	80-120					

Lab Batch #: 3032688 Sample: 567704-007 / SMP Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/08/17 13:38 SURROGATE RECOVERY STUDY **Amount** True Control BTEX by EPA 8021B Found Limits Amount Recovery Flags [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0286 0.0300 95 80-120 4-Bromofluorobenzene 0.0256 0.0300 80-120 85

Lab Batch #: 3032688 Sample: 567704-008 / SMP Batch: Matrix: Soil

Units: mg/kg Date Analyzed: 11/08/17 13:57 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 3032688 **Sample:** 567704-014 / SMP Batch: Matrix: Soil

Units:	mg/kg	Date Analyzed: 11/08/17 18:22	SURROGATE RECOVERY STUDY									
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluoro	obenzene	•	0.0296	0.0300	99	80-120						
4-Bromoflu	orobenzene		0.0257	0.0300	86	80-120						

Sample: 567704-015 / SMP Lab Batch #: 3032688 Batch: Matrix: Soil

Units: mg/kg	Date Analyzed: 11/08/17 18:39	SU	RROGATE RI	ECOVERY	STUDY	
]	BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Analytes	0.0301	0.0300	100	80-120	
4-Bromofluorobenzen	e	0.0293	0.0300	98	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: Rusty Anchor 7 Federal Com 1H

Project ID: 212C-MD-01014 Work Orders: 567704,

Lab Batch #: 3032688 **Sample:** 567704-021 / SMP Matrix: Soil Batch: 1

Units:	mg/kg	Date Analyzed: 11/08/17 18:58	SURROGATE RECOVERY STUDY								
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluorober	nzene		0.0295	0.0300	98	80-120					
4-Bromofluoro	benzene		0.0256	0.0300	85	80-120					

Lab Batch #: 3032813 **Sample:** 567704-001 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 11/09/17 00:31	SURROGATE RECOVERY STUDY								
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
o-Terphenyl	[44.2	49.9	89	70-130					
1-Chlorooct	ane		95.2	99.8	95	70-130					

Sample: 567704-007 / SMP **Lab Batch #:** 3032813 Batch: 1 Matrix: Soil

Date Analyzed: 11/09/17 00:53 **Units:** mg/kg SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	41.3	49.9	83	70-130	
1-Chlorooctane	86.2	99.8	86	70-130	

Lab Batch #: 3032813 **Sample:** 567704-008 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 11/09/17 01:12	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
o-Terpheny	1	•	42.4	49.9	85	70-130			
1-Chlorooct	tane		91.2	99.8	91	70-130			

Lab Batch #: 3032813 Sample: 567704-014 / SMP Batch: Matrix: Soil

Units:	mg/kg	Date Analyzed: 11/09/17 01:33	SURROGATE RECOVERY STUDY						
	TPI	H by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
o-Terphenyl			44.4	49.8	89	70-130			
1-Chloroocta	ane		93.7	99.6	94	70-130			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: Rusty Anchor 7 Federal Com 1H

Project ID: 212C-MD-01014 Work Orders: 567704,

Lab Batch #: 3032813 Matrix: Soil Sample: 567704-015 / SMP Batch:

Units:	mg/kg	Date Analyzed: 11/09/17 01:54	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			راما				
o-Terphenyl			46.1	50.0	92	70-130			
1-Chloroocta	ane		97.8	99.9	98	70-130			

Lab Batch #: 3032813 Sample: 567704-021 / SMP Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/09/17 02:14 SURROGATE RECOVERY STUDY **Amount** True Control TPH by Texas1005 Found Limits Amount Recovery Flags [A] [B] %R %R [D] **Analytes** o-Terphenyl 43.7 50.0 87 70-130 1-Chlorooctane 100 70-130 91.1 91

Lab Batch #: 3032813 Sample: 567704-022 / SMP Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 11/09/17 02:35 SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	46.6	49.9	93	70-130	
1-Chlorooctane	98.7	99.7	99	70-130	

Lab Batch #: 3032813 **Sample:** 567704-025 / SMP Batch: Matrix: Soil

Units:	mg/kg	Date Analyzed: 11/09/17 02:56	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
o-Terpheny	<u> </u>		43.2	49.9	87	70-130			
1-Chlorooct	ane		91.5	99.8	92	70-130			

Lab Batch #: 3032942 Sample: 567704-022 / SMP Batch: Matrix: Soil

Units: mg	g/kg	Date Analyzed: 11/10/17 10:16	SURROGATE RECOVERY STUDY						
	BTEX	Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzer	ne		0.0294	0.0300	98	80-120			
4-Bromofluorobenz	zene		0.0282	0.0300	94	80-120			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Rusty Anchor 7 Federal Com 1H

Work Orders: 567704, **Project ID:** 212C-MD-01014

Lab Batch #: 3032942 **Sample:** 567704-025 / SMP **Batch:** 1 **Matrix:** Soil

Units:	mg/kg	Date Analyzed: 11/10/17 10:34	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluorobe	enzene		0.0261	0.0300	87	80-120			
4-Bromofluoro	benzene		0.0272	0.0300	91	80-120			

Lab Batch #: 3032688 Sample: 7634017-1-BLK / BLK Batch: 1 Matrix: Solid

Units:	its: mg/kg Date Analyzed: 11/08/17 11:26 SURROGATE RECOVERY STUDY								
	BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluoro	obenzene		0.0281	0.0300	94	80-120			
4-Bromoflu	orobenzene		0.0251	0.0300	84	80-120			

Lab Batch #: 3032813 Sample: 7634080-1-BLK / BLK Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 11/08/17 22:07 SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	60.1	50.0	120	70-130	
1-Chlorooctane	122	100	122	70-130	

Lab Batch #: 3032942 Sample: 7634163-1-BLK / BLK Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 11/10/17 09:20	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluoro	benzene	•	0.0265	0.0300	88	80-120			
4-Bromofluo	orobenzene		0.0259	0.0300	86	80-120			

Lab Batch #: 3032688 Sample: 7634017-1-BKS / BKS Batch: 1 Matrix: Solid

Units: mg/kg		SURROGATE RECOVERY STUDY							
		by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzen		indig tes	0.0296	0.0300	99	80-120			
4-Bromofluorobenz	ene		0.0280	0.0300	93	80-120			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.%

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Rusty Anchor 7 Federal Com 1H

Work Orders: 567704, Project ID: 212C-MD-01014

Units: mg/kg Date Analyzed: 11/08/17 22:29 SURROGATE RECOVERY STUDY True Amount Control TPH by Texas1005 **Found** Amount Recovery Limits Flags [A] [B] %R %R [D]**Analytes** o-Terphenyl 45.0 50.0 90 70-130 1-Chlorooctane 93.5 100 94 70-130

Lab Batch #: 3032942 Sample: 7634163-1-BKS / BKS Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 11/10/17 07:24 SURROGATE RECOVERY STUDY **Amount** True Control BTEX by EPA 8021B Found Limits Amount Recovery Flags [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0285 0.0300 95 80-120 4-Bromofluorobenzene 0.0300 0.026889 80-120

Lab Batch #: 3032688 Sample: 7634017-1-BSD / BSD Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 11/08/17 08:58 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Units:	mg/kg	Date Analyzed: 11/08/17 22:48	SU	RROGATE RE	ECOVERY S	STUDY	
	TP	H by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terpheny	1	- Timely tes	51.7	50.0	103	70-130	
1-Chlorooct	ane		107	100	107	70-130	

 Lab Batch #: 3032942
 Sample: 7634163-1-BSD / BSD
 Batch: 1
 Matrix: Solid

Units:	mg/kg	Date Analyzed: 11/10/17/07:42	SURROGATE RECOVERY STUDY									
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	A	analytes			[D]							
1,4-Difluoro	benzene		0.0334	0.0300	111	80-120						
4-Bromofluorobenzene		0.0318	0.0300	106	80-120							

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.%

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Rusty Anchor 7 Federal Com 1H

Work Orders : 567704, **Project ID:** 212C-MD-01014

Units: Date Analyzed: 11/08/17 10:10 mg/kg SURROGATE RECOVERY STUDY True Amount Control BTEX by EPA 8021B **Found** Amount Recovery Limits Flags [A] [B] %R %R [D]**Analytes** 1,4-Difluorobenzene 0.0300 0.0300 80-120 100 4-Bromofluorobenzene 0.0264 0.0300 88 80-120

Units: mg/kg Date Analyzed: 11/08/17 23:28 SURROGATE RECOVERY STUDY Amount True Control TPH by Texas1005 Found Limits Amount Recovery Flags [A] [B] %R %R [D] **Analytes** o-Terphenyl 49.4 50.0 99 70-130 1-Chlorooctane 99.9 106 106 70-130

Units: mg/kg Date Analyzed: 11/10/17 08:01 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Units: Date Analyzed: 11/08/17 10:29 SURROGATE RECOVERY STUDY mg/kg Amount True Control BTEX by EPA 8021B Found Amount Recovery Limits **Flags** [B] %R %R [A] [D] **Analytes** 1,4-Difluorobenzene 0.0280 0.0300 93 80-120 4-Bromofluorobenzene 0.0289 0.0300 96 80-120

Units: Date Analyzed: 11/08/17 23:50 mg/kg SURROGATE RECOVERY STUDY Amount True Control TPH by Texas1005 **Found** Amount Recovery Limits Flags [A] [B] %R %R [D]**Analytes** o-Terphenyl 47.3 50.0 95 70-130 1-Chlorooctane 105 100 105 70-130

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.%

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Rusty Anchor 7 Federal Com 1H

Work Orders: 567704, **Project ID:** 212C-MD-01014

Lab Batch #: 3032942 **Sample:** 567976-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: Date Analyzed: 11/10/17 08:20 mg/kg SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Found Amount Limits Flags Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0278 0.0300 93 80-120 4-Bromofluorobenzene 0.0252 0.0300 84 80-120

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.%

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^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: Rusty Anchor 7 Federal Com 1H

Work Order #: 567704 Project ID: 212C-MD-01014

Analyst: ALJ Date Prepared: 11/08/2017 Date Analyzed: 11/08/2017

Lab Batch ID: 3032688 **Sample:** 7634017-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00199	0.0994	0.0834	84	0.0998	0.0866	87	4	70-130	35	
Toluene	< 0.00199	0.0994	0.0820	82	0.0998	0.0864	87	5	70-130	35	
Ethylbenzene	< 0.00199	0.0994	0.0853	86	0.0998	0.0873	87	2	71-129	35	
m,p-Xylenes	< 0.00398	0.199	0.165	83	0.200	0.170	85	3	70-135	35	
o-Xylene	< 0.00199	0.0994	0.0838	84	0.0998	0.0849	85	1	71-133	35	

Analyst: ALJ Date Prepared: 11/10/2017 Date Analyzed: 11/10/2017

Units: mg/kg BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0917	92	0.100	0.0949	95	3	70-130	35	
Toluene	< 0.00199	0.0996	0.0904	91	0.100	0.0939	94	4	70-130	35	
Ethylbenzene	< 0.00199	0.0996	0.0945	95	0.100	0.0982	98	4	71-129	35	
m,p-Xylenes	< 0.00398	0.199	0.180	90	0.200	0.191	96	6	70-135	35	
o-Xylene	< 0.00199	0.0996	0.0907	91	0.100	0.0960	96	6	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Rusty Anchor 7 Federal Com 1H

Work Order #: 567704 Project ID: 212C-MD-01014

Analyst: MNV Date Prepared: 11/10/2017 Date Analyzed: 11/10/2017

Lab Batch ID: 3033074 **Sample:** 7634184-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	253	101	250	253	101	0	90-110	20	

Analyst: MNV **Date Prepared:** 11/10/2017 **Date Analyzed:** 11/10/2017

Lab Batch ID: 3033077 **Sample:** 7634186-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	<5.00	250	275	110	250	256	102	7	90-110	20	

Analyst: ARM **Date Prepared:** 11/08/2017 **Date Analyzed:** 11/08/2017

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Range Hydrocarbons	<25.0	1000	864	86	1000	993	99	14	75-125	25	
C12-C28 Range Hydrocarbons	<25.0	1000	912	91	1000	1040	104	13	75-125	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: Rusty Anchor 7 Federal Com 1H

Work Order #: 567704 **Project ID:** 212C-MD-01014

Lab Batch ID: 3032688 **QC- Sample ID:** 567702-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/08/2017 **Date Prepared:** 11/08/2017 **Analyst:** ALJ

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	2105410 [2]	[G]	,,	, , ,	, , , , ,	
Benzene	< 0.00202	0.101	0.127	126	0.100	0.120	120	6	70-130	35	
Toluene	< 0.00202	0.101	0.102	101	0.100	0.0972	97	5	70-130	35	
Ethylbenzene	< 0.00202	0.101	0.0872	86	0.100	0.0823	82	6	71-129	35	
m,p-Xylenes	< 0.00404	0.202	0.170	84	0.201	0.162	81	5	70-135	35	
o-Xylene	< 0.00202	0.101	0.0805	80	0.100	0.0763	76	5	71-133	35	

Lab Batch ID: 3032942 **QC- Sample ID:** 567976-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/10/2017 Date Prepared: 11/10/2017 Analyst: ALJ

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Parent Sample Result	Spike	Spiked Sample Result	Sample	-	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Benzene	< 0.00202	0.101	0.115	114	0.100	0.123	123	7	70-130	35	
Toluene	< 0.00202	0.101	0.0997	99	0.100	0.110	110	10	70-130	35	
Ethylbenzene	< 0.00202	0.101	0.0907	90	0.100	0.0984	98	8	71-129	35	
m,p-Xylenes	< 0.00404	0.202	0.178	88	0.201	0.194	97	9	70-135	35	
o-Xylene	< 0.00202	0.101	0.0841	83	0.100	0.0897	90	6	71-133	35	



Form 3 - MS / MSD Recoveries



Project Name: Rusty Anchor 7 Federal Com 1H

Work Order #: 567704 Project ID: 212C-MD-01014

Lab Batch ID: 3033074 **QC- Sample ID:** 567625-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/10/2017 Date Prepared: 11/10/2017 Analyst: MNV

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Chloride	33.6	250	297	105	250	298	106	0	90-110	20	

Lab Batch ID: 3033074 **QC- Sample ID:** 567630-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/10/2017 **Date Prepared:** 11/10/2017 **Analyst:** MNV

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
· ·											
Chloride	5.71	246	267	106	246	268	107	0	90-110	20	

Lab Batch ID: 3033077 **QC- Sample ID:** 567704-020 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/10/2017 Date Prepared: 11/10/2017 Analyst: MNV

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	517	248	734	88	248	735	88	0	90-110	20	X



Form 3 - MS / MSD Recoveries



Project Name: Rusty Anchor 7 Federal Com 1H

Work Order #: 567704 **Project ID:** 212C-MD-01014

Lab Batch ID: 3033077 **QC- Sample ID:** 567704-023 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/10/2017 **Date Prepared:** 11/10/2017 **Analyst:** MNV

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	30.2	249	296	107	249	298	108	1	90-110	20	

Lab Batch ID: 3032813 **QC- Sample ID:** 567629-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/08/2017 **Date Prepared:** 11/08/2017 **Analyst:** ARM

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Range Hydrocarbons	<25.0	999	960	96	1000	926	93	4	75-125	25	
C12-C28 Range Hydrocarbons	<25.0	999	994	99	1000	964	96	3	75-125	25	

$$\label{eq:matrix_problem} \begin{split} & \text{Matrix Spike Percent Recovery} \quad [D] = 100*(C-A)/B \\ & \text{Relative Percent Difference} \quad RPD = 200*|(C-F)/(C+F)| \end{split}$$

Corrected Temp: 2

Analysis Request of Chain of Custody Record

of

Marathon Rusty Anchor 7 Federal Com 1H Tetra Tech, Inc. Tetra Tech, Inc. Sampler Signature: Xenco Midland Tx Trench #2 (4') 2-3'BEB Trench #2 (6') 2-3'BEB Trench #2 (10') 2-3'BEB Trench #3 (2') 2-3'BEB Trench #3 (2') 2-3'BEB Trench #3 (3') 2-3'BEB Date: Time: Date: Time: Date: Time: Received by: Ke Manager:	Analysis Rec			4000 N.	ig Spring Street, Ste		
Industrial Marathon Site Manager: Ike Tavarez Ike Tavarez Ike Tavarez Ike Tavarez	7	Tetra Tech, Inc.		4000 N.: 401 M Tel Fax	400 N. big Spring Street, Ste 401 Midland, Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946		
Clusterion: Lea County, New Mexico Sampler Signature: Wilke Carmona Wilke Carmona Sampler Signature: Wilke Carmona Wilk	t Name:	Marathon	Site Manager:	lke Tava	rez		
Ternch #2 (6) 2-3BEB	Project Name:	Rusty Anchor 7 Federal Com 1H					
Tetra Tech, Inc. Sampler Signature: Mike Carmona	Project Location: (county, state)	Lea County, New Mexico	Project #:	212C	-MD-01014	- 1	
Comments: Xenco Midland Tx	Invoice to:	Tetra Tech. Inc.				- 1	
TPH exceeds 5,000 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper sate sampling	Receiving Laborat		Sampler Signature:	Mike	Carmona	- 1	
If TPH exceeds 5,000 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper sate should be per sate shoul	Comments:	TANK TO THE PROPERTY OF THE PR				1	
LAB # SAMPLE IDENTIFICATION PRESENT PRESENT MATRIX PRESENT MATRIX PRESENT MATRIX PRESENT MATRIX PRESENT MATRIX		IPH exceeds 5,000 mg/kg, Benzene exceeds 10 mg/kg,	or Total BTEX exceeds	s 50 mg/kg rui	n deeper sa	ample	
SAMPLE IDENTIFICATION Tranch #2 (4') 2-3'BEB			SAMPLING	MATRIX	PRESERV	OD	RS /N)
Trench #2 (4') 2-3'BEB E <td>LAB#</td> <td>SAMPLE IDENTIFICATION</td> <td>YEAR: 2017</td> <td></td> <td></td> <td></td> <td>D (Y/</td>	LAB#	SAMPLE IDENTIFICATION	YEAR: 2017				D (Y/
Trench #2 (4') 2-3'BEB 11/1/2017 X Trench #2 (6') 2-3'BEB 11/1/2017 X Trench #2 (10') 2-3'BEB 11/1/2017 X Trench #3 (0-1') 2-3'BEB 11/1/2017 X Trench #3 (1') 2-3'BEB 11/1/2017 X Trench #3 (2') 2-3'BEB 11/1/2017 X Trench #3 (6') 2-3'BEB 11/1/2017 X Trench #3 (6') 2-3'BEB 11/1/2017 X Trench #3 (8') 2-3'BEB 11/1/2017 X Date: Time: Received by: Date: Date: Time: Received by: Date:	(LAB USE)				HNO ₃	None	# CONTA
Trench #2 (6) 2-3'BEB 11/1/2017 X Trench #2 (8') 2-3'BEB 11/1/2017 X Trench #3 (0-1') 2-3'BEB 11/1/2017 X Trench #3 (1') 2-3'BEB 11/1/2017 X Trench #3 (2') 2-3'BEB 11/1/2017 X Trench #3 (6') 2-3'BEB 11/1/2017 X Trench #3 (8') 2-3'BEB 11/1/2017 X Trench #3 (8') 2-3'BEB 11/1/2017 X Date: Time: Received by: Date: Date: Time: Received by: Date:	7	anch #2 (4') 2-3'BEB		_	×	+	1 Z
Trench #2 (8') 2-3'BEB 11/1/2017 X Trench #2 (10') 2-3'BEB 11/1/2017 X Trench #3 (0-1') 2-3'BEB 11/1/2017 X Trench #3 (1') 2-3'BEB 11/1/2017 X Trench #3 (6') 2-3'BEB 11/1/2017 X Trench #3 (8') 2-3'BEB 11/1/2017 X Trench #3 (8') 2-3'BEB 11/1/2017 X Date: Time: Received by: Date: Date: Time: Received by: Date: Date:		ench #2 (6') 2-3'BEB	11/1/2017	×	×		
Trench #2 (10') 2-3'BEB 11/1/2017 X X Trench #3 (0-1') 2-3'BEB 11/1/2017 X X Trench #3 (1') 2-3'BEB 11/1/2017 X X Trench #3 (6') 2-3'BEB 11/1/2017 X X Trench #3 (8') 2-3'BEB 11/1/2017 X X Trench #3 (8') 2-3'BEB Date: 11/1/2017 X X Date: Time: Received by: Date: Date: Time: Received by: Date:		ench #2 (8') 2-3'BEB	11/1/2017	×	×		_1 Z
Trench #3 (0-1') 2-3'BEB 11/1/2017 X X Trench #3 (1') 2-3'BEB 11/1/2017 X X Trench #3 (4') 2-3'BEB 11/1/2017 X X Trench #3 (8') 2-3'BEB 11/1/2017 X X Trench #3 (8') 2-3'BEB Date: 11/1/2017 X X Date: Time: Received by: Date: Date: Time: Received by: Date:		ench #2 (10') 2-3'BEB	11/1/2017	×	×		ı z
Trench #3 (1') 2-3'BEB 11/1/2017 X X Trench #3 (2') 2-3'BEB 11/1/2017 X X Trench #3 (6') 2-3'BEB 11/1/2017 X X Trench #3 (8') 2-3'BEB Date: Time: Received by: Date: Date: Paceived by: Date: D		ench #3 (0-1") 2-3'BEB	11/1/2017	×	×		1 N
Trench #3 (2') 2-3'BEB 11/1/2017 X Intrinch #3 (4') 2-3'BEB Trench #3 (8') 2-3'BEB 11/1/2017 X Intrinch #3 (8') 2-3'BEB Date: Time: Received by: Date: Date: Time: Received by: Date: Date: Time: Received by: Date:		ench #3 (1') 2-3'BEB	11/1/2017	×	×		1 Z
Trench #3 (4') 2-3'BEB 11/1/2017 X 1 Trench #3 (6') 2-3'BEB 11/1/2017 X 1 Date: Time: Received by: Date: Date: Time: Received by: Date: Date: Time: Received by: Date:		anch #3 (2') 2-3'BEB	11/1/2017	×	×		1 N
Trench #3 (6') 2-3'BEB 11/1/2017 X :		ench #3 (4') 2-3'BEB	11/1/2017	×	×		1 N
Trench #3 (8') 2-3'BEB Date: Time: Received by: Date: Date: Time: Received by: Date: Date: Time: Received by: Date:		ench #3 (6') 2-3'BEB	11/1/2017	×	×		1 N
Date: Time: Received by: Date: Date: Time: Received by: Date:	7	7	11/1/2017	×	×		1 N
Date: Time: Received by: Date: Date: Time: Received by: Date:	Helinquisned by:	1	Received by:	ta	1	p	1
Date: Time: Received by: Date:	Relinquished by:		Received by:			0.	Sample Temperature
	Relinquished by:		Received by:			**	
				Correct	(6-23: +0.2°C)		

Analysis Rec	Analysis Hequest of Chain of Custody Record							Page	3 of	ω
4	Tetra Tech, Inc.		4000 N. Big Spring Street, Ste 401 Midland, Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946	ng Street, Ste exas 79705 92-4559 32-3946		1	56770	7		
Client Name:	Marathon	Site Manager:	Ike Tavarez				ANALYSIS REQUEST	~ [
Project Name:	Rusty Anchor 7 Federal Com 1H					(Circle	le or Specify	Method No.)		
Project Location: (county, state)	Lea County, New Mexico	Project #:	212C-MD-01014	01014						.000
Invoice to:	Tetra Tech, Inc.					g	9	ned list		Final 1
Receiving Laboratory:		Sampler Signature:	Mike Carmona	iona		Se Hg) Se H	attach		
Comments:						O - OF				
	lf TPH exceeds 5,000 mg/kg , Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples	or Total BTEX exce	eds 50 mg/kg run de	eper samples.		- DRO	624	TDS		
		SAMPLING	MATRIX	PRESERVATIVE METHOD		GRO -	latiles 260B /	s) Ifate	_	
LAB#	SAMPLE IDENTIFICATION	YEAR: 2017	R			1005 (15M (0 70C tals Ag	latiles mi Vol /ol. 82	bestos		
(LAB USE)		DATE	WATER SOIL HCL	HNO ₃ ICE None	# CONT	TPH TX TPH 801 PAH 827 Total Me	TCLP Me TCLP Vo TCLP Se RCI GC/MS V	PCB's 80 NORM PLM (Ast Chloride Chloride General	Anion/Ca	lold 26
7	Trench #3 (10') 2-3'BEB	11/1/2017	×	×	딁	×	-	× (\rightarrow	25 of
	Background #1 (0-1')	11/1/2017	×	×	Z			×		age :
-	Background #1 (1')	11/1/2017	×	×	Z	1		×		ļ
m	Background #1 (2')	11/1/2017	×	×	Z			×		
m	Background #1 (3')	11/1/2017	×	×	z	×		×		
										2
Relinquished by:	Date: Time: 1556	Received by:	Date:	Time:		LAB USE ONLY	REMARKS: STAI	STANDARD		
Relinquished by:	Date: Time:	Received by:	Date:	Time:		Sample Temperature	RUSH: Same Day	24 hr	48 hr 72 hr	
Relinquished by:	Date: Time:	Received by:	Date:	Time:			Special R	Husn Charges Authorized Special Report Limits or TRRP Report	Report	
		ORIGINAL COPY			IR ID:R-8	NND DELIVERED	VERED FEDEX UPS	S Tracking #:		
			Corrected Temp: 2	np: N						



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland

Date/ Time Received: 11/07/2017 03:56:00 PM

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Work Order #: 567704

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments					
#1 *Temperature of cooler(s)?		2					
#2 *Shipping container in good condition	?	Yes					
#3 *Samples received on ice?		Yes					
#4 *Custody Seals intact on shipping cor	ntainer/ cooler?	No					
#5 Custody Seals intact on sample bottle	es?	N/A					
#6*Custody Seals Signed and dated?		N/A					
#7 *Chain of Custody present?		Yes					
#8 Any missing/extra samples?		No					
#9 Chain of Custody signed when relinqu	uished/ received?	Yes					
#10 Chain of Custody agrees with sampl	e labels/matrix?	Yes					
#11 Container label(s) legible and intact?	?	Yes					
#12 Samples in proper container/ bottle?	,	Yes					
#13 Samples properly preserved?		Yes					
#14 Sample container(s) intact?		Yes					
#15 Sufficient sample amount for indicate	ed test(s)?	Yes					
#16 All samples received within hold time	e?	Yes					
#17 Subcontract of sample(s)?		N/A					
#18 Water VOC samples have zero head	dspace?	N/A					
* Must be completed for after-hours delivery of samples prior to placing in the refrigerator Analyst: PH Device/Lot#:							
Checklist completed by: Checklist reviewed by:	Jessica Kramer Muck	Date: 11/08/2017 Date: 11/11/2017					