

# 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,

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Mike Kimmel Client Services Manager

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### Sample Id

Trench #1 (0-1') 2-3 BEB
Trench #1 (1') 2-3 BEB
Trench #1 (2') 2-3 BEB
Trench #1 (4') 2-3 BEB
Trench #1 (6') 2-3 BEB
Trench #1 (8') 2-3 BEB
Trench #1 (10') 2-3 BEB
Trench #2 (0-1') 2-3 BEB
Trench #2 (1') 2-3 BEB
Trench #2 (2') 2-3 BEB
Trench #2 (4') 2-3 BEB
Trench #2 (6') 2-3 BEB
Trench #2 (8') 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') 2-3 BEB
Trench #3 (4') 2-3 BEB
Trench #3 (6') 2-3 BEB
Trench #3 (8') 2-3 BEB
Trench #3 (10') 2-3 BEB
Background #1 (0-1')
Background #1 (1')
Background #1 (2')
Background #1 (3')

## Sample Cross Reference 567704

### Tetra Tech- Midland, Midland, TX

Rusty Anchor 7 Federal Com 1H

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	11-01-17 00:00		567704-001
S	11-01-17 00:00		567704-002
S	11-01-17 00:00		567704-003
S	11-01-17 00:00		567704-004
S	11-01-17 00:00		567704-005
S	11-01-17 00:00		567704-006
S	11-01-17 00:00		567704-007
S	11-01-17 00:00		567704-008
S	11-01-17 00:00		567704-009
S	11-01-17 00:00		567704-010
S	11-01-17 00:00		567704-011
S	11-01-17 00:00		567704-012
S	11-01-17 00:00		567704-013
S	11-01-17 00:00		567704-014
S	11-01-17 00:00		567704-015
S	11-01-17 00:00		567704-016
S	11-01-17 00:00		567704-017
S	11-01-17 00:00		567704-018
S	11-01-17 00:00		567704-019
S	11-01-17 00:00		567704-020
S	11-01-17 00:00		567704-021
S	11-01-17 00:00		567704-022
S	11-01-17 00:00		567704-023
S	11-01-17 00:00		567704-024
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 Work Order Number(s): 567704 
 Report Date:
 15-NOV-17

 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.



Certificate of Analysis Summary 567704

Tetra Tech- Midland, Midland, TX Project Name: Rusty Anchor 7 Federal Com 1H RUP ACCREONES

Project Id:212C-MD-01014Contact:Ike TavarezProject Location:Lea Co, NM

Date Received in Lab:Tue Nov-07-17 03:56 pmReport Date:15-NOV-17Project Manager:Kelsey Brooks

	Lab Id:	567704-0	001	567704-0	02	567704-0	003	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	2-3 BEB	Trench #1 (6') 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							1			
	Analyzed:	Nov-08-17											
	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 1	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 1	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										

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Certificate of Analysis Summary 567704

Tetra Tech- Midland, Midland, TX

REAL PACENCON

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

Report Date: 15-NOV-17

Project Manager: Kelsey Brooks

Project Id:212C-MD-01014Contact:Ike TavarezProject Location:Lea Co, NM

Project Name: Rusty Anchor 7 Federal Com 1H

	Lab Id:	567704-0	007	567704-0	008	567704-0	009	567704-0	010	567704-0	11	567704-0	012
Analysis Doguested	Field Id:	Trench #1 (10')	2-3 BEB	Trench #2 (0-1')	2-3 BEB	Trench #2 (1')	2-3 BEB	Trench #2 (2')	2-3 BEB	Trench #2 (4') 2	2-3 BEB	Trench #2 (6')	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	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	13:00	Nov-10-17	13:00	Nov-10-17	13:00	Nov-10-17	13:00
	Analyzed:	Nov-10-17	19:18	Nov-10-17	19:24	Nov-10-17	19:31	Nov-10-17	19:37	Nov-10-17	19:43	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								
	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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Certificate of Analysis Summary 567704

Tetra Tech- Midland, Midland, TX Project Name: Rusty Anchor 7 Federal Com 1H SUP ACCROSHES

Project Id:212C-MD-01014Contact:Ike TavarezProject Location:Lea Co, NM

Date Received in Lab:Tue Nov-07-17 03:56 pmReport Date:15-NOV-17Project Manager:Kelsey Brooks

	Lab Id:	567704-0	013	567704-0	14	567704-0	)15	567704-0	16	567704-0	017	567704-0	)18
Amaluaia Degranated	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	2-3 BEB	Trench #3 (2') 2	2-3 BEB	Trench #3 (4') 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	Nov-08-17	08:00						
	Analyzed:			Nov-08-17 1	8:22	Nov-08-17	18:39						
	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	< 0.00202	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 1	5:00	Nov-10-17	15:00	Nov-10-17	15:00	Nov-10-17	15:00	Nov-10-17	15:00
	Analyzed:	Nov-10-17	20:47	Nov-10-17 2	20:53	Nov-10-17	21:00	Nov-10-17	21:06	Nov-10-17 2	21:25	Nov-10-17	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 1	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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Mike Kimmel Client Services Manager



Ike Tavarez

Lea Co, NM

**Contact:** 

**Project Location:** 

Certificate of Analysis Summary 567704

Tetra Tech- Midland, Midland, TX

Project Name: Rusty Anchor 7 Federal Com 1H



Date Received in Lab:Tue Nov-07-17 03:56 pmReport Date:15-NOV-17Project Manager:Kelsey Brooks

	Lab Id:	567704-0	)19	567704-0	020	567704-0	021	567704-	022	567704-0	023	567704-0	024
An alugia Boaucated	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		SOII	,	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	20:28	Nov-10-17	21:44	Nov-10-17	21:51	Nov-10-17	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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Mike Kimmel Client Services Manager



Ike Tavarez

Lea Co, NM

**Contact:** 

**Project Location:** 

Certificate of Analysis Summary 567704

Tetra Tech- Midland, Midland, TX Project Name: Rusty Anchor 7 Federal Com 1H



Date Received in Lab:Tue Nov-07-17 03:56 pmReport Date:15-NOV-17Project Manager:Kelsey Brooks

	Lab Id:	567704-025			
Analysis Requested	Field Id:	Background #1 (3')			
inalysis nequested	Depth:				
	Matrix:	SOIL			
	Sampled:	Nov-01-17 00:00			
BTEX by EPA 8021B	Extracted:	Nov-10-17 07:45	8		
	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			
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 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	



	: 3032688	Sample: 567704-001 / SMP			: Soil		
Units:	mg/kg	Date Analyzed: 11/08/17 13:20	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1,4-Difluorob	enzene		0.0279	0.0300	93	80-120	
4-Bromofluor			0.0286	0.0300	95	80-120	
Lab Batch #:	: 3032688	Sample: 567704-007 / SMP	Batcl	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 11/08/17 13:38	SU	RROGATE R	ECOVERY S	STUDY	
		by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorob			0.0286	0.0300	95	80-120	
4-Bromofluor			0.0256	0.0300	85	80-120	
Lab Batch #:	3032688	Sample: 567704-008 / SMP	Batc		: Soil		
Units:	mg/kg	Date Analyzed: 11/08/17 13:57	SU	RROGATE R	ECOVERY	STUDY	
		by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		Analytes					
1,4-Difluorob			0.0282	0.0300	94	80-120	
4-Bromofluor		Secondar 5(7704.014 / SMD	0.0261	0.0300	87	80-120	
Lab Batch #:		Sample: 567704-014 / SMP	Batcl				
Units:	mg/kg	Date Analyzed: 11/08/17 18:22	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	by EPA 8021B	Amount	True	Recovery	Control Limits	Flags
		Analytes	Found [A]	Amount [B]	%R [D]	%R	
1,4-Difluorob					%R	%R 80-120	
1,4-Difluorob 4-Bromofluoro	enzene		[A]	[B]	%R [D]		
4-Bromofluor	enzene obenzene		[ <b>A</b> ]	[ <b>B</b> ] 0.0300 0.0300	%R [D] 99 86	80-120	
4-Bromofluor Lab Batch #:	enzene obenzene	Analytes	[A] 0.0296 0.0257 Batcl	[ <b>B</b> ] 0.0300 0.0300	%R [D] 99 86 : Soil	80-120 80-120	
,	enzene obenzene : 3032688 mg/kg BTEX	Analytes  Sample: 567704-015 / SMP Date Analyzed: 11/08/17 18:39  Support Supp	[A] 0.0296 0.0257 Batcl	[B] 0.0300 0.0300 h: 1 Matrix	%R         [D]           99         86           :: Soil         ECOVERY S           Recovery %R         %R	80-120 80-120	Flags
4-Bromofluor Lab Batch #:	enzene obenzene : 3032688 mg/kg BTEX	Analytes Sample: 567704-015 / SMP Date Analyzed: 11/08/17 18:39	[A] 0.0296 0.0257 Batcl SU Amount Found	[B] 0.0300 0.0300 h: 1 Matrix RROGATE R True Amount	%R [D] 99 86 : Soil ECOVERY S Recovery	80-120 80-120 STUDY Control Limits	Flags

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



Work Ore Lab Batch #	<b>ders :</b> 567704 #: 3032688	4, <b>Sample:</b> 567704-021 / SMP	Bate	-	: 212C-MD-0 :: Soil	01014	
Units:	mg/kg	Date Analyzed: 11/08/17 18:58	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluorol	benzene		0.0295	0.0300	98	80-120	
4-Bromofluo	robenzene		0.0256	0.0300	85	80-120	
Lab Batch #	<b>#:</b> 3032813	Sample: 567704-001 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 11/09/17 00:31	SU	RROGATE R	ECOVERY S	STUDY	
		I by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		Analytes					
o-Terphenyl			44.2	49.9	89	70-130	
1-Chloroocta			95.2	99.8	95	70-130	
Lab Batch #		Sample: 567704-007 / SMP	Batc				
Units:	mg/kg	Date Analyzed: 11/09/17 00:53	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	l by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphenyl			41.3	49.9	83	70-130	
1-Chloroocta	ine		86.2	99.8	86	70-130	
Lab Batch #	#: 3032813	Sample: 567704-008 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 11/09/17 01:12	SU	RROGATE R	ECOVERY S	STUDY	
		I by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl		Analytes	42.4	49.9	85	70-130	
1-Chloroocta	ine		91.2	99.8	91	70-130	
Lab Batch #		Sample: 567704-014 / SMP	Batc			/0-150	
Units:	mg/kg	Date Analyzed: 11/09/17 01:33		RROGATE R		STUDY	
	ТРН	l by Texas1005	Amount Found	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytas	[A]	[0]			
o-Terphenyl		Analytes	[A] 	49.8	[D] 89	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



		Sample: 567704-015 / SMP	Bate	h: 1 Matrix	. 5011		
Units:	mg/kg	Date Analyzed: 11/09/17 01:54	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphenyl			46.1	50.0	92	70-130	
1-Chlorooctane	e		97.8	99.9	98	70-130	
Lab Batch #:	3032813	Sample: 567704-021 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 11/09/17 02:14	SU	RROGATE R	ECOVERY S	STUDY	
		by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl		Analytes	43.7	50.0	87	70-130	
1-Chlorooctane	e		91.1	100	91	70-130	
Lab Batch #:		Sample: 567704-022 / SMP	Batc			10 150	
Units:	mg/kg	Date Analyzed: 11/09/17 02:35		RROGATE R		STUDY	
	TPH	by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes	[1]	[10]	[D]	/0R	
o-Terphenyl			46.6	49.9	93	70-130	
1-Chlorooctane	e		98.7	99.7	99	70-130	
Lab Batch #:	3032813	Sample: 567704-025 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 11/09/17 02:56	SU	RROGATE R	ECOVERY S	STUDY	
		by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl		Anaryus	43.2	49.9	87	70-130	
1-Chlorooctane	e		91.5	99.8	92	70-130	
Lab Batch #:		Sample: 567704-022 / SMP	Bate			, , , , , , , , , , , , , , , , , , , ,	
Units:	mg/kg	Date Analyzed: 11/10/17 10:16		RROGATE R		STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Amalataa					
1,4-Difluorobe		Analytes	0.0294	0.0300	[ <b>D</b> ] 98	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



	<b>:ders :</b> 567704 #: 3032942	4, <b>Sample:</b> 567704-025 / SMP	Batcl		: 212C-MD-0 : Soil	01014	
Units:	mg/kg	Date Analyzed: 11/10/17 10:34	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	5 by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0261	0.0300	87	80-120	
4-Bromoflu	orobenzene		0.0272	0.0300	91	80-120	
Lab Batch	<b>#:</b> 3032688	Sample: 7634017-1-BLK / E	BLK Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 11/08/17 11:26	SU	RROGATE R	ECOVERY	STUDY	
		A by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor		Anaryus	0.0281	0.0300	94	80-120	
4-Bromoflu			0.0251	0.0300	84	80-120	
	#: 3032813	Sample: 7634080-1-BLK / E			_	80-120	
Units:	mg/kg	Date Analyzed: 11/08/17 22:07					
omus.	ing/kg	Date Analyzed: 11/00/17 22:07	50	RROGATE R		STUDY	
	TPH	by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terpheny	1		60.1	50.0	120	70-130	
1-Chlorooc	tane		122	100	122	70-130	
Lab Batch	<b>#:</b> 3032942	Sample: 7634163-1-BLK / E	BLK Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 11/10/17 09:20	SU	RROGATE R	ECOVERY	STUDY	
		A by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluor			0.0265	0.0300	88	80-120	
4-Bromoflu	orobenzene		0.0259	0.0300	86	80-120	
	#: 3032688	Sample: 7634017-1-BKS / E					
Units:	mg/kg	<b>Date Analyzed:</b> 11/08/17 08:39		RROGATE R		STUDY	
	BTEX	C by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0296	0.0300	99	80-120	
4-Bromoflu	orobenzene		0.0280	0.0300	93	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



<b>T</b> T •4	a	Sample: 7634080-1-BKS /					
Units:	mg/kg	Date Analyzed: 11/08/17 22:29	SU	RROGATE R	ECOVERY	STUDY	
	TPH	I by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphenyl			45.0	50.0	90	70-130	
1-Chloroocta			93.5	100	94	70-130	
Lab Batch #		Sample: 7634163-1-BKS /	BKS Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 11/10/17 07:24	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene	Analytes	0.0285	0.0300	95	80-120	
4-Bromofluo			0.0268	0.0300	89	80-120	
Lab Batch #		Sample: 7634017-1-BSD /				00 120	
Units:	mg/kg	Date Analyzed: 11/08/17 08:58		RROGATE R		STUDY	
	D/DEX		Amount	True		Control	
	BIE2	X by EPA 8021B	Found [A]	Amount [B]	Recovery %R [D]	Limits %R	Flags
140.0	1	Analytes					
1,4-Difluoro			0.0302	0.0300	101	80-120	
4-Bromofluo Lab Batch #		Secondary 7/24090 1 DSD /	0.0272	0.0300 h: 1 Matrix	91	80-120	
		Sample: 7634080-1-BSD /					
Units:	mg/kg	Date Analyzed: 11/08/17 22:48	SU	RROGATE R	ECOVERY	STUDY	
	TPH	I by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl			51.7	50.0	103	70-130	
1-Chloroocta	ine		107	100	107	70-130	
Lab Batch #	#: 3032942	Sample: 7634163-1-BSD /	BSD Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 11/10/17 07:42	SU	RROGATE R	ECOVERY	STUDY	
	ВТЕУ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		J					
1,4-Difluoro	benzene		0.0334	0.0300	111	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



	r <b>ders :</b> 56770 #: 3032688	4, Sample: 567702-007 S / MS	S Bate			01014	
Units:	mg/kg	Date Analyzed: 11/08/17 10:10	SU	RROGATE R	Recovery %R [D]         Control Limits %R [D]           100         80-120           88         80-120           88         80-120           Soil         ECOVERY STUDY           Recovery %R [D]           99         70-130           106         70-130           50il         ECOVERY STUDY           Recovery %R [D]         %R (D)           99         70-130           99         70-130           106         70-130           Soil         ECOVERY STUDY           Recovery %R [D]         %R (D)           94         80-120           92         80-120           Soil         ECOVERY STUDY           ECOVERY STUDY         %R [D]           94         80-120           92         80-120           93         80-120           96         80-120		
	втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	%R	Limits	Flags
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0300	0.0300	100	80-120	
4-Bromoflu	orobenzene		0.0264	0.0300	88	80-120	
Lab Batch	#: 3032813	Sample: 567629-001 S / MS	S Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 11/08/17 23:28	SU	RROGATE R	ECOVERY	STUDY	
	TPH	I by Texas1005	Amount Found [A]	True Amount [B]	%R	Limits	Flags
		Analytes					1
o-Terpheny			49.4	50.0		1	
1-Chlorooct			106	99.9		70-130	
	#: 3032942	Sample: 567976-002 S / MS			-		
Units:	mg/kg	Date Analyzed: 11/10/17 08:01	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	•	Limits	Flags
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0283	0.0300	94	80-120	
4-Bromoflu	orobenzene		0.0277	0.0300	92	80-120	
Lab Batch	#: 3032688	Sample: 567702-007 SD / N	ASD Bate	h: 1 Matrix	: Soil		1
Units:	mg/kg	Date Analyzed: 11/08/17 10:29	SU	RROGATE R	ECOVERY	STUDY	
	ВТЕХ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	%R	Limits	Flags
1,4-Difluoro	obenzene	j	0.0280	0.0300	93	80-120	
4-Bromoflu			0.0289	0.0300			
	#: 3032813	Sample: 567629-001 SD / N				1	
Units:	mg/kg	Date Analyzed: 11/08/17 23:50				STUDY	
		l by Texas1005	Amount Found [A]	True Amount [B]	%R	Limits	Flags
- 17 1		Analytes	47.2	50.0		70.120	
o-Terpheny			47.3	50.0			
1-Chlorooct	ane		105	100	105	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



	rders: 56770 n#: 3032942	4, Sample: 567976-002 SD / N	MSD Batch	Project ID: n: 1 Matrix:		01014	
Units:	mg/kg	Date Analyzed: 11/10/17 08:20	SU	RROGATE RI	ECOVERY S	STUDY	
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	robenzene		0.0278	0.0300	93	80-120	
4-Bromoflu	uorobenzene		0.0252	0.0300	84	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



### **BS / BSD Recoveries**



### Project Name: Rusty Anchor 7 Federal Com 1H

Work Order #: 567704							Proj	ject ID:	212C-MD-(	01014	
Analyst: ALJ	D	ate Prepar	red: 11/08/201	17			Date A	nalyzed:	1/08/2017		
Lab Batch ID: 3032688 Sample: 7634017-1-	BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
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	D	ate Prepar	ed: 11/10/201	17			Date A	nalyzed:	1/10/2017		
Lab Batch ID: 3032942 Sample: 7634163-1-	BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
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							Proj	ect ID:	212C-MD-	01014	
Analyst: MNV	D	ate Prepar	red: 11/10/201	7			Date A	nalyzed:	1/10/2017		
Lab Batch ID: 3033074 Sample: 7634184-1-	BKS	Batcl	<b>h #:</b> 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
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	D	ate Prepar	red: 11/10/201	7	1		Date A	nalyzed: 1	1/10/2017	1	
Lab Batch ID: 3033077 Sample: 7634186-1-	BKS	Batcl	<b>h #:</b> 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
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	275	110	250	256	102	7	90-110	20	
Analyst: ARM	D	ate Prepar	ed: 11/08/201	! !7	1	1	Date A	nalyzed: 1	1/08/2017		
Lab Batch ID: 3032813 Sample: 7634080-1-		-						e			
	BKS	Batcl	<b>h #:</b> 1					Matrix: S	Solid		
Units: mg/kg	BKS		h #: 1 K /BLANK \$	SPIKE / ]	BLANK S	SPIKE DUP				DY	
Units: mg/kg TPH by Texas1005	BKS Blank Sample Result [A]			SPIKE / ] Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Blank Spike Duplicate Result [F]				OY Control Limits %RPD	Flag
Units: mg/kg	Blank Sample Result	BLAN Spike Added	K /BLANK S Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	LICATE Blk. Spk Dup. %R	RECOVI	ERY STUI Control Limits	Control Limits	Flag

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



<b>Work Order # :</b> 567704						Project II	<b>D:</b> 212C-1	MD-01014	4		
Lab Batch ID: 3032688	QC- Sample ID:	567702	-007 S	Ba	tch #:	1 Matrix	<b>x:</b> Soil				
<b>Date Analyzed:</b> 11/08/2017	Date Prepared:	11/08/2	017	Ar	alyst: A	ALJ					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added	Spiked Sample Result [C]	Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	%R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Anarytes		[B]		[D]	[E]		[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	Ba	tch #:	1 Matrix	<b>x:</b> Soil				
<b>Date Analyzed:</b> 11/10/2017	Date Prepared:	11/10/2	017	Ar	alyst: A	ALJ					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B 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
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	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



## Form 3 - MS / MSD Recoveries

#### Project Name: Rusty Anchor 7 Federal Com 1H



Work Order # :	567704						Project II	<b>):</b> 212C-1	MD-0101	4		
Lab Batch ID:	3033074	QC- Sample ID:	567625	-005 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	11/10/2017	Date Prepared:	11/10/2	017	An	alyst: N	MNV					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]	[C]	<sup>7</sup> 6K [D]	E]	Result [F]	[G]	70	70 <b>K</b>	70KFD	
Chloride		33.6	250	297	105	250	298	106	0	90-110	20	
Lab Batch ID:	3033074	QC- Sample ID:	567630	-005 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	11/10/2017	Date Prepared:	11/10/2	017	An	alyst: N	MNV					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	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		5.71	246	267	106	246	268	107	0	90-110	20	
Lab Batch ID:	3033077	QC- Sample ID:	567704	-020 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	11/10/2017	Date Prepared:	11/10/2	017	An	alyst: N	MNV					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
Inorgai	nic 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

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



## Form 3 - MS / MSD Recoveries

#### Project Name: Rusty Anchor 7 Federal Com 1H



Work Order # :	567704						Project II	<b>D:</b> 212C-1	MD-0101	4		
Lab Batch ID:	3033077	QC- Sample ID:	567704	-023 S	Ba	tch #:	1 Matrix	<b>x:</b> Soil				
Date Analyzed:	11/10/2017	Date Prepared:	11/10/2	017	An	alyst: N	MNV					
<b>Reporting Units:</b>	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorga	nic Anions by EPA 300/300.1	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		30.2	249	296	107	249	298	108	1	90-110	20	
Lab Batch ID:	3032813	QC- Sample ID:	567629	-001 S	Ba	tch #:	1 Matrix	<b>x:</b> Soil				
Date Analyzed:	11/08/2017	Date Prepared:	11/08/2	017	An	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	TPH by Texas1005	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Range I	Hydrocarbons	<25.0	999	960	96	1000	926	93	4	75-125	25	
C12-C28 Range												1

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery  $[G] = 100^{*}(F-A)/E$ 

Intra Tech, Inc.         Norther Signand State, Song State	And With State Stat	Relinquished by:	Relinquished by:	Relinquished by:	Relinquished by:		Trenc	Trenc	Trenc	Trenc	Trenc	Trenc	Trenc	Trenc	Trenc	( LAB USE )	LAB #			Receiving Laboratory: Comments:		Invoice to:	Project Location: (county, state)	Project Name:	Client Name:	۲,	Analysis Reques
My, Inc.     an one state and	Page         1         Convertigenerative rest (convertigenerative rest (convertigenerative) rest (convertigenerative rest (convertigenerative rest (convertigenerative) rest (convertigenerative rest (convertigenerative) rest (convertigenerative) res (convertigenerative) rest (convertigenerative) res				n Del 1	1 rench #2 (2') 2-3'BEB	h #2 (1') 2-3'BEB	h #2 (0-1') 2-3'BEB	h #1 (10') 2-3'BEB	h #1 (8') 2-3'BEB	h #1 (6') 2-3'BEB	h #1 (4') 2-3'BEB	h #1 (2') 2-3'BEB	h #1 (1') 2-3'BEB	h #1 (0-1') 2-3'BEB		SAMPLE I		1 exceeds 5,000 mg/kg	Xenco Midland	Tetra Tech		Lea County, Ne	Rusty Anchor 7	Marathon	Tetra	t of Chain of Custoo
Image: Service of the service of th	ANALYSIS RECUEST OULY Sample Temperature Special Report Limits or THPP Page Analysis Authorized Special Report Limits or THPP Page Special Report Limits or THPP Page S			Time:	7												DENTIFICATION		, Benzene exceeds 10 mg/kg, o	Tx			w Mexico	Federal Com 1H		a Tech, Inc.	ly Record
Image: Sample Temperature       Image:	ANALYSIS RECUEST (Circle or Specify Method No.) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Received by:		Received by:	Maria	11/1/2017 Received by:	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017		YEAR: 2017	SAMPLING	r Total BTEX exce	Sampler Signature:			Project #:		Site Manager:		
H       I	Antropy and a set of the set of t	D			Her		×	×	×	×	×	X	×	×	×	WATER SOIL		MATRIX	eds 50 mg/kg run	Mike C			212C-I		lke Tavar	4000 N. Bij 401 Mid Tel (4 Fax (	
Image: A intervention of the second secon	Analysis       Analysis <td< td=""><th></th><td></td><td>¢</td><td>)</td><td></td><td>×</td><td>×</td><td>×</td><td>×</td><td>X</td><td>×</td><td>×</td><td>X</td><td>X</td><td>HNO<sub>3</sub> ICE</td><td></td><td>PRESERVATIVE METHOD</td><td>i deeper samples</td><td>armona</td><td></td><td></td><td>MD-01014</td><td></td><td>ez</td><td>g Spring Street, Ste land, Texas 79705 (32) 682-4559 (32) 682-3946</td><td></td></td<>			¢	)		×	×	×	×	X	×	×	X	X	HNO <sub>3</sub> ICE		PRESERVATIVE METHOD	i deeper samples	armona			MD-01014		ez	g Spring Street, Ste land, Texas 79705 (32) 682-4559 (32) 682-3946	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	Image: Special Report Limits or TRRP Report Limits or TRR		9		_	1 N	1 N			1 N	1 N	1 N	1 N			FILTERE	D (Y	RS /N)		B							
ANALYSIS REQUEST         ANALYSIS REQUEST         Or Specify Method No.         REMARKS:         STANDARD         Rush Charges Authorized         NORM         NOR <t< td=""><td>TANDARD STANDARD STAN</td><th></th><td>ample Temperature</td><td></td><td>LAB USE</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td>×</td><td>TPH TX1 TPH 8013 PAH 8270 Total Meta</td><td>005 5M ( 0C als A</td><td>(Ext to GRO - g As Ba</td><td>C35) DRO - a Cd Cr</td><td>ORO - N Pb Se H</td><td>Нg</td><td></td><td></td><td>(Circi</td><td></td><td>56</td><td></td></t<>	TANDARD STANDARD STAN		ample Temperature		LAB USE								_		×	TPH TX1 TPH 8013 PAH 8270 Total Meta	005 5M ( 0C als A	(Ext to GRO - g As Ba	C35) DRO - a Cd Cr	ORO - N Pb Se H	Нg			(Circi		56	
Page Page Page Page Page Page Page Page	H     Chloride     Suifate     IDS       H     General Water Chemistry (see attached list)     0       H     Anion/Cation Balance	Special R	Rush Cha	RUSH: S	STAI	BEMADKS:										TCLP Vola TCLP Sen RCI GC/MS Vo	atiles ni Vc ol. 8	olatiles 260B /	624					or Speci	ANALYSIS	POLL	
N I I Concept Mictor Chamister (loss attacked list)	Bernor     General water offentilistry (see attached list)       72 br     Anion/Cation Balance	leport Limits or TRRF		24 hr	NDARD	×	×	×	×	×	×	×	×	×	×	PCB's 80 NORM PLM (Asb Chloride Chloride	82 / esto: Su	608 s) Ilfate	TDS		abod	liet)		Method			Page _

alysis Request of Chain of Custody Record

CF:(0-6: -0.2°C ) (6-23: +0.2°C) Corrected Temp: ⊋

ch, Inc. Sile Manager: IKe om 1H Project #: Sampler Signature:	ch, Inc. Sile Manager: Ike om 1H Project #: Sampler Signature:	A Tech, Inc. A Tech, Inc. A Tech, Inc. A Tech, Inc. A Tech, Inc. A Tech, Inc. Bite Manager: Site Manager: Ike Tavarez Ike Tavarez Ike Tavarez Ike Tavarez Ike Tavarez Ike Tavarez Ike Tavarez Mike Carmona	ch, Inc.     4000 N. Big Spring Street, Ste 401 Midland, Resease Strongs Tel (Magad, Resease Strongs Fax (432) 682-3946     5 (c)       om 1H     Ite Tavarez     5 (c)       om 1H     Project #:     212C-MD-01014     (Circle or (Circle or 0)       Sampler Signature:     Nike Carmona     608     -0	Site Manager:     Ike Tavarez     Site Manager:     Ike Tavarez     Site Manager:     Site Manager:     Ike Tavarez     Site Manager:     Site Manager:     Site Tavarez     Site Manager:     Site Manager:     Site Tavarez     Site Manager:     Site Manager:     Site Tavarez     Site Manager:     Site Tavarez     Site Manager:     Site Manager:     Site Tavarez     Site Manager:     Site Tavarez     Site Manager:     Site Manager:     Site Tavarez     Site Manager:     Site Tavarez     Site Manager:     Site Manager:     Site Tavarez     Site Manager:     Site Manager:     Site Tavarez     Site Manager:     Site Manager:     Site Manager:     Site Manager:     Site Tavarez     Site Manager:     Site Manager:     Site Manager:     Site Manager:     Site Tavarez     Site Manager:	Page       Ch, Inc.     400 N. Big spring Streat. Ste 401 Midland, Texage 37905 Tel (432) 682-4599 Fax (432) 682-459 Fax (432) 682-4	And Constraints     And On N. Big Spring Street. Ste And Manual, Revealed Street. Ste Tel (Maginal, Revealed Ste Tel (M
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	by: Date: Time:	Date:	1,72, 1.7.17	2		Background #1 (3')	Background #1 (2')	Background #1 (1')	Background #1 (0-1')	Trench #3 (10') 2-3'BEB		SAMPLE IDENTIFICATION		If TPH exceeds 5,000 mg/kg , Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples		Xenco Midland Tx	Tetra Tech, Inc.	Lea County, New Mexico			Marathon	<b>Tetra Tech, Inc.</b>	Analysis Request of Chain of Custody Record
ORIGINAL COPY	Received by:	Received by:	Heceived by:			11/1/2017	11/1/2017	11/1/2017	11/1/2017	11/1/2017	DATE	YEAR: 2017	SAMPLING	or Total BTEX exce		sampier signature:	2		Project #:		Site Manager:		
Temp: 2 . 2 CF:(0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp: 2	Date: Tin	Date: Tin	h			x	×	×	×	×	WATEF SOIL HCL HNO <sub>3</sub> ICE	2	MATRIX PRESERVATIVE METHOD	eeds 50 mg/kg run deeper s		Mike Carmona		212C-MD-01014			Ike Tavarez	4000 N. Big Spring Street, Ste 401 Midland, Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946	
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AND DELIVERED		Sample Temperature	LAB USE ONLY			×			××	×	BTEX 80 TPH TX1 TPH 801 PAH 827 Total Meta TCLP Meta	005 ( 5M ( 0C als Ag	Ext to GRO	- DRC	) - C Cr F	Pb Se	Hg			(Circle		5	
RED FEDEX UPS Tracking #:	Special Report Limits or TRRP Report	Rush Charges Authorized				×	×	X	X	×	TCLP Vol TCLP Ser RCI GC/MS V GC/MS S PCB's 80 NORM PLM (Asb Chloride	atiles mi Vo ol. 82 emi. 1 82 / 6 estos	latiles 260B / /ol. 8 508	624	625					or Specify Method	ANALYSIS REQUEST	POLLA	Page
	RRP Report	nr 48 hr 72 hr									Chloride General V Anion/Ca Hold	Vater		mistry	_	ee atta		ist)		No.)			3 of3



### **XENCO** Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 11/07/2017 03:56:00 PM Temperature Measuring device used : R8 Work Order #: 567704 Comments Sample Receipt Checklist 2 #1 \*Temperature of cooler(s)? #2 \*Shipping container in good condition? Yes #3 \*Samples received on ice? Yes #4 \*Custody Seals intact on shipping container/ cooler? No #5 Custody Seals intact on sample bottles? 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 relinquished/ received? Yes #10 Chain of Custody agrees with sample 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 indicated test(s)? Yes #16 All samples received within hold time? Yes #17 Subcontract of sample(s)? N/A #18 Water VOC samples have zero headspace? N/A

#### \* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by: Jession Vramer

Jessica Kramer

Date: 11/08/2017

Checklist reviewed by:

Mbeti Mike Kimmel

Date: 11/11/2017

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